



PACIFICORP CONSERVATION POTENTIAL ASSESSMENT FOR 2019-2038

Volume 4: Class 2 DSM Analysis Appendix I

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Energy Solutions. Delivered.

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CLASS 2 MEASURE DATA AND ASSUMPTIONS

Appendix I is a comprehensive list of the measures considered for the Class 2 potential analysis. For each measure, the following information is provided:

- **Segment:** Relevant market segment, building type, or facility type. Relevant options are listed in Appendix A.
- **End Use:** Category of end-use equipment to which measure savings apply. Relevant options are listed in Appendix A.
- **Measure Name:** Technical description of the measure, including measure efficiency.
- **Unit Description:** Units for savings and incremental costs.
- **Construction Vintage:** New or existing construction.
- **Average Savings per Unit (Annual kWh @meter):** First-year kWh savings at the customer meter.
- **Measure Life:** Expected life of measure in years.
- **Average Incremental Cost Per Unit:** Includes incremental equipment, labor, and present value O&M costs.
- **Base Year Saturation:** Percentage of units (homes, building, equipment, etc.) that have already installed or received the measure.
- **Applicability:** Percentage of units (homes, buildings, equipment, etc.) that can receive the measure. Accounts for technical limitations of installing the measure. The available market is Applicability minus Base Year Saturation.
- **Levelized Cost:** Cost (\$) per kWh saved at the generator or system level. This value is given in terms of the total resource cost (TRC) for all states except for Utah, where it is given in terms of the utility cost (UCT) per regulatory preferences.
- **Cumulative Achievable Technical Potential in 2038:** Represents cumulative annual energy savings in 2038 at the generator or system level. This value accounts for the impact of standards, in years after standards go into effect and is consistent with totals presented in Volume 2.
- **20-Year Incremental Achievable Technical Potential:** Represents the sum of 20-year incremental savings at the generator or system level. This value is consistent with what PacifiCorp used for IRP modeling.

Residential Measures

California Residential Measures Assumptions

Table I-1 Summary of Residential Measure Assumptions in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	35.52	14	\$133.62	8%	100%	\$560.20	65.63	66.29	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	6.03	10	\$0.01	18%	100%	\$0.27	41.65	41.65	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	20%	100%	\$118.82	93.33	86.94	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	Existing	72.13	15	\$7,492.42	7%	100%	\$9,999.00	31.26	31.26	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	50.95	14	\$53.94	20%	100%	\$118.82	0.00	2.46	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,347.05	13	\$694.04	72%	100%	\$39.58	21,601.92	21,601.92	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	2,955.47	12	\$31.27	6%	100%	\$935.08	70.75	80.38	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	Existing	5.96	12	\$1.71	100%	100%	(\$24.71)	1,732.44	1,424.07	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	4.00	20	\$30.05	100%	100%	\$46.68	1,178.94	1,186.60	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	Existing	20.43	10	\$2.15	100%	100%	(\$89.27)	1,853.75	1,757.59	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	13.16	12	\$7.96	100%	100%	(\$6.93)	826.72	614.26	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Clothes Dryer	1 units	Existing	38.07	15	\$252.88	89%	100%	\$644.67	318.35	318.35	CDR-Appliances-RTF-v2.1-5
Single Family	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	92%	100%	(\$20.36)	810.11	810.11	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	Existing	14.52	15	\$43.80	100%	100%	\$392.10	81.35	81.35	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	Existing	39.88	21	\$56.02	58%	100%	\$168.07	128.76	128.76	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	Existing	16.13	15	\$43.80	37%	100%	\$352.89	36.90	36.90	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	Existing	175.51	19	\$335.85	82%	100%	\$226.22	1,598.92	1,598.92	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	93%	100%	\$92.99	144.07	144.07	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	55%	100%	\$72.38	254.76	254.76	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	66%	100%	\$27.74	439.75	439.75	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	199%	100%	\$995.21	126.52	126.52	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	190%	100%	\$0.05	563.44	563.44	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	55%	100%	\$296.44	31.74	31.74	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	188%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	118.09	10	\$804.14	0%	100%	\$1,065.27	32.40	32.40	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	Existing	2,264.70	15	\$358.09	3%	100%	\$20.55	922.05	922.05	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	Existing	2,728.58	15	\$1,513.66	0%	100%	\$72.09	45.92	45.92	PLHT-Miscellaneous-AEG-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	195.92	10	\$304.56	9%	100%	\$243.18	294.60	294.60	SPA-Miscellaneous-SCE-13_R2-2
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	14%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	Existing	183.78	20	\$116.51	29%	100%	\$73.60	656.69	656.69	AEG Estimate
Single Family	Cooling	Central AC	12 kBtu/hr	New	32.53	14	\$133.62	8%	100%	\$611.73	14.69	14.79	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	6.00	10	\$0.01	18%	100%	\$0.27	4.45	4.45	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	20%	100%	\$64.72	61.18	58.33	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	New	68.24	15	\$7,492.42	7%	100%	\$9,999.00	7.26	7.26	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	94.22	14	\$53.94	20%	100%	\$64.72	0.00	1.68	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,332.54	13	\$694.04	72%	100%	\$39.83	2,511.40	2,511.40	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	2,955.47	12	\$31.27	6%	100%	\$935.08	7.55	8.05	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	New	5.96	12	\$1.71	100%	100%	(\$24.71)	180.67	161.36	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	4.00	20	\$30.05	100%	100%	\$46.68	151.01	152.02	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	New	20.43	10	\$2.15	100%	100%	(\$89.27)	176.65	169.76	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	New	13.16	12	\$7.96	100%	100%	(\$6.93)	84.07	70.94	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Clothes Dryer	1 units	New	38.07	15	\$252.88	89%	100%	\$644.67	40.52	40.52	CDR-Appliances-RTF-v2.1-5
Single Family	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	92%	100%	(\$20.36)	101.88	101.88	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	New	14.52	15	\$43.80	100%	100%	\$392.10	11.55	11.55	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	New	39.88	21	\$56.02	58%	100%	\$168.07	16.69	16.69	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	New	16.13	15	\$43.80	37%	100%	\$352.89	5.27	5.27	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	New	175.51	19	\$335.85	82%	100%	\$226.22	225.50	225.50	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	New	7.76	11	\$4.77	93%	100%	\$92.99	16.87	16.87	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	55%	100%	\$72.38	19.39	19.39	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	New	73.81	5	\$8.47	66%	100%	\$27.74	36.85	36.85	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	New	16.85	4	\$58.89	199%	100%	\$995.21	10.10	10.10	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	New	47.87	6	\$0.01	190%	100%	\$0.05	61.23	61.23	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	55%	100%	\$296.44	3.44	3.44	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	188%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	New	118.09	10	\$804.14	0%	100%	\$1,065.27	3.59	3.59	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	New	2,264.70	15	\$358.09	3%	100%	\$20.55	120.35	120.35	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	New	2,728.58	15	\$1,513.66	0%	100%	\$72.09	6.06	6.06	PLHT-Miscellaneous-AEG-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	195.92	10	\$304.56	9%	100%	\$243.18	35.78	35.78	SPA-Miscellaneous-SCE-13_R2-2
Single Family	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	14%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	New	183.78	20	\$116.51	29%	100%	\$73.60	89.39	89.39	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	35.95	14	\$133.62	4%	100%	\$553.59	3.69	3.72	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	10.14	10	\$0.01	29%	100%	\$51.44	311.09	304.47	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	7%	100%	\$194.42	3.61	3.36	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	Existing	0.00	15	\$7,492.42	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	30.73	14	\$53.94	7%	100%	\$194.42	0.00	0.06	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,914.39	13	\$694.04	78%	100%	\$31.88	3,446.68	3,446.68	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	3,692.19	12	\$31.27	6%	100%	\$748.50	10.88	12.45	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	Existing	5.92	12	\$1.71	100%	100%	(\$24.69)	288.07	238.06	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	4.25	20	\$30.05	100%	100%	\$43.97	30.14	30.35	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	Existing	17.90	10	\$2.15	100%	100%	(\$101.49)	42.51	40.13	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	10.74	12	\$7.96	100%	100%	(\$8.09)	84.61	61.26	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Clothes Dryer	1 units	Existing	30.10	15	\$252.88	44%	100%	\$815.57	22.32	22.32	CDR-Appliances-RTF-v2.1-5
Multifamily	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	80%	100%	(\$20.36)	126.06	126.06	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	Existing	14.52	15	\$43.80	100%	100%	\$392.10	14.38	14.38	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	Existing	39.88	21	\$56.02	2%	100%	\$168.07	0.74	0.74	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	Existing	16.13	15	\$43.80	2%	100%	\$352.89	0.41	0.41	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	Existing	141.36	19	\$335.85	90%	100%	\$280.87	241.13	241.13	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	91%	100%	\$92.99	24.88	24.88	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	28%	100%	\$72.38	23.09	23.09	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	33%	100%	\$27.74	39.70	39.70	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	170%	100%	\$995.21	19.27	19.27	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	119%	100%	\$0.05	62.25	62.25	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	28%	100%	\$296.44	2.81	2.81	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	146%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	0.00	15	\$358.09	0%	100%	\$0.00	0.00	0.00	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$1,513.66	0%	100%	\$0.00	0.00	0.00	PLHT-Miscellaneous-AEG-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	0.00	10	\$304.56	0%	100%	\$0.00	0.00	0.00	SPA-Miscellaneous-SCE-13_R2-2
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	18%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	Existing	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	New	28.09	14	\$133.62	4%	100%	\$708.49	1.03	1.04	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	8.04	10	\$0.01	29%	100%	\$62.00	39.20	34.15	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	7%	100%	\$103.73	3.66	3.49	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	New	0.00	15	\$7,492.42	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	58.31	14	\$53.94	7%	100%	\$103.73	0.00	0.06	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,912.57	13	\$694.04	78%	100%	\$31.90	622.36	622.36	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	3,692.19	12	\$31.27	6%	100%	\$748.50	1.81	1.93	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	New	5.92	12	\$1.71	100%	100%	(\$24.69)	58.65	53.60	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	4.25	20	\$30.05	100%	100%	\$43.97	6.68	6.72	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	New	17.90	10	\$2.15	100%	100%	(\$101.49)	8.05	7.79	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	10.74	12	\$7.96	100%	100%	(\$8.09)	17.88	15.57	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Clothes Dryer	1 units	New	30.10	15	\$252.88	44%	100%	\$815.57	4.40	4.40	CDR-Appliances-RTF-v2.1-5
Multifamily	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	80%	100%	(\$20.36)	24.47	24.47	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	New	14.52	15	\$43.80	100%	100%	\$392.10	3.17	3.17	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	New	39.88	21	\$56.02	2%	100%	\$168.07	0.15	0.15	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	New	16.13	15	\$43.80	2%	100%	\$352.89	0.09	0.09	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	New	141.36	19	\$335.85	90%	100%	\$280.87	54.30	54.30	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	New	7.76	11	\$4.77	91%	100%	\$92.99	4.61	4.61	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	28%	100%	\$72.38	2.68	2.68	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	New	73.81	5	\$8.47	33%	100%	\$27.74	5.10	5.10	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	New	16.85	4	\$58.89	170%	100%	\$995.21	2.37	2.37	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	New	47.87	6	\$0.01	119%	100%	\$0.05	10.60	10.60	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	28%	100%	\$296.44	0.47	0.47	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	146%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	New	0.00	15	\$358.09	0%	100%	\$0.00	0.00	0.00	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$1,513.66	0%	100%	\$0.00	0.00	0.00	PLHT-Miscellaneous-AEG-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	0.00	10	\$304.56	0%	100%	\$0.00	0.00	0.00	SPA-Miscellaneous-SCE-13_R2-2
Multifamily	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	18%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	New	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	36.43	14	\$133.62	8%	100%	\$546.26	14.89	15.04	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	6.39	10	\$0.01	21%	100%	\$0.26	11.46	11.46	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	12%	100%	\$123.03	7.68	7.15	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	Existing	46.53	15	\$7,492.42	10%	100%	\$9,999.00	6.34	6.34	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	49.58	14	\$53.94	12%	100%	\$123.03	0.00	0.32	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	949.78	13	\$552.48	74%	100%	\$46.94	4,052.71	4,053.13	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	2,452.74	12	\$31.27	6%	100%	\$1,126.74	13.28	15.09	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	Existing	6.20	12	\$1.71	100%	100%	(\$23.80)	352.02	290.21	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	4.00	20	\$30.05	100%	100%	\$46.68	116.06	116.83	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	Existing	21.26	10	\$2.15	100%	100%	(\$86.04)	185.98	177.07	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	12.85	12	\$7.96	100%	100%	(\$7.07)	72.57	53.64	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	47.48	15	\$252.88	90%	100%	\$516.95	88.73	88.73	CDR-Appliances-RTF-v2.1-5
Mobile Home	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	79%	100%	(\$20.36)	154.59	154.59	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	Existing	14.52	15	\$43.80	100%	100%	\$392.10	17.93	17.93	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	Existing	39.88	21	\$56.02	58%	100%	\$168.07	28.28	28.28	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	16.13	15	\$43.80	34%	100%	\$352.89	7.30	7.30	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	Existing	212.80	19	\$335.85	73%	100%	\$186.58	368.26	368.26	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	97%	100%	\$92.99	31.73	31.73	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	60%	100%	\$72.38	62.78	62.78	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	72%	100%	\$27.74	107.93	107.93	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	197%	100%	\$995.21	27.74	27.74	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	201%	100%	\$0.05	129.84	129.84	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	60%	100%	\$296.44	7.63	7.63	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	177%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	2,264.70	15	\$358.09	2%	100%	\$20.55	151.03	151.03	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$1,513.66	0%	100%	\$0.00	0.00	0.00	PLHT-Miscellaneous-AEG-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	195.92	10	\$304.56	3%	100%	\$243.18	24.12	24.12	SPA-Miscellaneous-SCE-13_R2-2
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	36%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	Existing	147.74	20	\$116.51	23%	100%	\$91.56	95.83	95.83	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	31.22	14	\$133.62	8%	100%	\$637.44	2.11	2.12	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	5.92	10	\$0.01	21%	100%	\$0.28	1.78	1.78	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	12%	100%	\$0.00	0.00	0.00	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	New	40.87	15	\$7,492.42	10%	100%	\$9,999.00	0.93	0.93	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	12%	100%	\$0.00	0.00	0.00	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	949.78	13	\$552.48	74%	100%	\$46.94	732.62	732.67	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	2,452.74	12	\$31.27	6%	100%	\$1,126.74	2.21	2.35	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	New	6.20	12	\$1.71	100%	100%	(\$23.80)	57.40	51.66	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	4.00	20	\$30.05	100%	100%	\$46.68	22.74	22.89	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	New	21.26	10	\$2.15	100%	100%	(\$86.04)	27.56	26.62	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	12.85	12	\$7.96	100%	100%	(\$7.07)	11.27	9.49	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Clothes Dryer	1 units	New	47.48	15	\$252.88	90%	100%	\$516.95	17.49	17.49	CDR-Appliances-RTF-v2.1-5
Mobile Home	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	79%	100%	(\$20.36)	30.01	30.01	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	New	14.52	15	\$43.80	100%	100%	\$392.10	3.94	3.94	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	New	39.88	21	\$56.02	58%	100%	\$168.07	5.66	5.66	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	New	16.13	15	\$43.80	34%	100%	\$352.89	1.66	1.66	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	New	212.80	19	\$335.85	73%	100%	\$186.58	82.93	82.93	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	New	7.76	11	\$4.77	97%	100%	\$92.99	5.75	5.75	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	60%	100%	\$72.38	7.29	7.29	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	New	73.81	5	\$8.47	72%	100%	\$27.74	13.86	13.86	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	New	16.85	4	\$58.89	197%	100%	\$995.21	3.41	3.41	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	New	47.87	6	\$0.01	201%	100%	\$0.05	22.11	22.11	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	60%	100%	\$296.44	1.29	1.29	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	177%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	New	2,264.70	15	\$358.09	2%	100%	\$20.55	30.37	30.37	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$1,513.66	0%	100%	\$0.00	0.00	0.00	PLHT-Miscellaneous-AEG-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	195.92	10	\$304.56	3%	100%	\$243.18	4.55	4.55	SPA-Miscellaneous-SCE-13_R2-2
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	36%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	New	147.74	20	\$116.51	23%	100%	\$93.02	19.73	19.73	AEG Estimate
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.33	45	\$1.32	22%	38%	\$75.31	573.51	584.95	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.51	45	\$1.32	22%	38%	\$75.31	1,987.16	2,064.74	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.05	45	\$1.15	22%	38%	\$299.81	88.58	90.35	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.36	45	\$1.15	22%	38%	\$299.81	465.87	484.05	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	Existing	39.22	15	\$631.36	4%	19%	\$392.72	68.73	70.10	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	Existing	175.68	15	\$631.36	4%	19%	\$392.72	233.38	242.49	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.05	45	\$1.63	0%	4%	\$120.56	35.34	36.04	INS_WLC-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.38	45	\$1.63	0%	4%	\$120.56	793.22	824.19	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.03	20	\$0.92	2%	2%	\$332.58	0.00	0.00	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.30	20	\$0.92	2%	2%	\$332.58	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.04	50	\$1.37	1%	1%	\$618.63	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.19	50	\$1.37	1%	1%	\$618.63	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.05	45	\$1.55	49%	60%	\$284.11	-31.30	-31.92	INS_FLR-Cooling-RTF-SFv3.7-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.63	45	\$1.55	49%	60%	\$284.11	280.61	291.56	INS_FLR-Heating-RTF-SFv3.7-7
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	-0.01	45	\$1.37	0%	0%	\$1,706.44	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.09	45	\$1.37	0%	0%	\$1,706.44	0.00	0.00	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$152.52	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.66	70	\$0.95	2%	2%	\$152.52	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$152.52	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.66	70	\$0.95	2%	2%	\$152.52	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	Existing	57.67	18	\$528.00	52%	60%	\$267.83	26.16	28.91	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	Existing	194.95	18	\$528.00	52%	60%	\$267.83	98.16	105.95	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$645.73	23%	56%	\$94.55	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Space Heating	Ducting - Repair and Sealing	household	Existing	837.22	20	\$645.73	23%	56%	\$94.55	1,829.84	1,975.04	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.09	10	\$0.55	8%	19%	\$252.82	106.02	115.50	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.27	10	\$0.55	8%	19%	\$252.82	363.83	389.14	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.01	15	\$0.78	26%	56%	\$284.92	44.42	45.31	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.36	15	\$0.78	26%	56%	\$284.92	1,725.47	1,792.83	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	15	\$0.66	9%	19%	\$244.51	8.58	8.75	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.36	15	\$0.66	9%	19%	\$244.51	600.35	623.79	INF_CTRL-Heating-7PLN-SFv7-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.08	15	\$0.67	9%	19%	\$210.89	93.51	94.61	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.35	15	\$0.67	9%	19%	\$210.89	320.93	329.15	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.73	45	\$21.76	30%	68%	\$323.46	552.41	563.44	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.38	45	\$21.76	30%	68%	\$323.46	3,685.19	3,829.05	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$159.55	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	7.88	20	\$10.51	3%	8%	\$159.55	505.50	525.23	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.71	10	\$3.73	12%	56%	\$835.55	645.37	658.25	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	Existing	291.19	15	\$1,692.66	4%	19%	\$141.83	505.85	513.98	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	Existing	1,304.17	15	\$1,692.66	4%	19%	\$141.83	1,724.27	1,782.46	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	60%	80%	\$263.00	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	Existing	7.50	45	\$18.64	60%	80%	\$263.00	278.88	289.77	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	Existing	84.11	30	\$59.05	60%	80%	\$78.18	191.92	193.98	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	60%	80%	\$78.18	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	72.46	15	\$4,269.72	1%	75%	\$246.50	211.56	211.90	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	2,028.96	15	\$4,269.72	1%	75%	\$246.50	3,345.65	3,345.65	DHP-Heating-RTF-SFv4.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	129.26	15	\$4,269.72	1%	45%	\$138.75	102.00	109.87	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,179.63	15	\$4,269.72	1%	45%	\$138.75	3,855.17	3,855.17	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	949.81	20	\$1,348.08	0%	0%	\$169.79	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	3,710.60	15	\$3,379.23	0%	23%	\$105.52	2,306.14	2,306.14	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	Existing	396.46	2	\$80.50	7%	75%	\$101.75	739.38	739.38	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	768.60	3	\$18.46	0%	50%	\$8.63	1,516.20	1,518.66	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	79.66	6	\$285.43	7%	75%	\$819.60	97.26	102.70	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.64	15	\$601.89	65%	75%	\$128.57	0.27	0.29	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	622.65	15	\$601.89	65%	75%	\$128.57	277.94	284.62	ASHP_MNT-Heating-RTF-SFv3.4-1
Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	377.87	15	\$8,271.00	0%	20%	\$332.98	250.76	261.61	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,223.59	15	\$8,271.00	0%	20%	\$332.98	845.63	876.06	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,831.37	15	\$8,271.00	0%	20%	\$332.98	1,265.87	1,300.11	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	11.05	10	\$48.72	40%	75%	\$704.00	89.89	90.95	FN_WH-Cooling-CPUC-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Whole-House Fan - Installation	household	Existing	46.36	20	\$737.07	15%	40%	\$1,884.29	138.15	140.91	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	Existing	7.60	5	\$254.58	4%	56%	\$145.08	47.14	47.90	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	Existing	429.25	5	\$254.58	4%	56%	\$145.08	2,026.86	2,095.26	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	Existing	78.24	5	\$485.43	1%	19%	\$135.66	161.81	164.41	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	Existing	745.65	5	\$485.43	1%	19%	\$135.66	1,173.62	1,213.22	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	Existing	17.76	5	\$485.43	1%	19%	\$135.66	125.49	149.42	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	Existing	14.29	5	\$485.43	1%	19%	\$135.66	32.65	39.50	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	Existing	31.07	5	\$485.43	1%	19%	\$135.66	377.75	267.75	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	233.27	40	\$864.21	0%	0%	\$410.15	0.00	0.00	DHW_DWHR-Water Heating-7PLN-v3-1
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	112.02	15	\$5.30	34%	50%	(\$182.77)	846.06	881.32	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	92.80	10	\$0.01	51%	75%	(\$358.56)	646.55	692.48	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.40	15	\$3.37	12%	0%	\$18.34	0.00	0.00	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,571.80	20	\$1,175.39	0%	0%	\$92.39	72.82	75.99	DHW_DSH-Water Heating-RTF-v2.2-7
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	79.67	2	\$5.13	41%	75%	\$34.32	442.56	474.01	DHW_STBK-Water Heating-ILTRM-v4.0-3

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Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	52.41	10	\$16.82	16%	45%	\$53.43	449.24	481.16	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	Existing	1,175.97	20	\$9,127.71	2%	30%	\$959.02	2,702.61	2,776.40	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	Existing	326.79	12	\$72.03	0%	12%	\$41.45	610.01	628.99	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	Existing	-57.84	12	\$72.03	0%	12%	\$41.45	-61.29	-62.49	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.59	8	\$102.48	0%	5%	\$244.43	149.92	195.98	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.57	15	\$10.55	8%	50%	\$87.25	403.85	533.36	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.39	3	\$28.71	1%	30%	\$441.25	207.13	273.55	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.39	10	\$19.80	2%	50%	\$263.18	349.35	461.38	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	200.94	7	\$222.66	0%	75%	\$245.66	1,106.45	1,242.83	RFG_DEC-Appliances-RTF-v5.1-1
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	50%	\$134.18	1,588.92	1,621.02	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.63	5	\$37.31	8%	25%	\$247.75	294.98	299.57	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	74.05	5	\$50.76	8%	25%	\$175.84	565.46	574.26	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	1%	75%	\$3.72	360.33	366.78	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,392.29	20	\$3,900.44	0%	30%	\$332.14	4.25	4.29	PLHT_SOL-Miscellaneous-AEG-1

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Single Family	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$140.93	251.80	256.31	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	3.69	16	\$179.25	0%	30%	\$9,596.46	72.01	87.11	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	583.34	20	\$15,574.39	0%	0%	\$289.84	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	2,100.65	20	\$15,574.39	0%	0%	\$289.84	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,328.05	20	\$15,574.39	0%	0%	\$289.84	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	473.16	20	\$15,574.39	0%	0%	\$289.84	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	126.97	20	\$15,574.39	0%	0%	\$289.84	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,132.97	20	\$15,574.39	0%	0%	\$289.84	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	303.29	20	\$15,574.39	0%	0%	\$289.84	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3

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Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	398.01	20	\$15,574.39	0%	0%	\$289.84	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Single Family	Cooling	Behavioral Programs	household	Existing	2.35	5	\$33.89	14%	36%	\$54.46	10.56	10.81	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	Existing	10.51	5	\$33.89	14%	36%	\$54.46	35.80	37.31	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	Existing	129.90	5	\$33.89	14%	36%	\$54.46	794.00	858.15	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	Existing	24.26	5	\$33.89	14%	36%	\$54.46	369.83	552.03	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$54.46	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$54.46	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$54.46	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$54.46	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.34	45	\$1.32	16%	38%	\$73.61	19.27	19.54	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	New	1.53	45	\$1.32	16%	38%	\$73.61	66.82	68.57	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.05	45	\$1.15	16%	38%	\$293.12	2.98	3.02	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.36	45	\$1.15	16%	38%	\$293.12	15.67	16.08	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	New	37.93	15	\$631.36	1%	5%	\$479.19	0.39	0.40	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	New	136.05	15	\$631.36	1%	5%	\$479.19	1.06	1.09	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.05	45	\$1.63	0%	0%	\$117.95	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.40	45	\$1.63	0%	0%	\$117.95	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.92	1%	15%	\$415.13	1.76	1.79	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.23	20	\$0.92	1%	15%	\$415.13	10.89	11.17	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.04	50	\$1.37	0%	5%	\$754.84	0.84	0.85	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.15	50	\$1.37	0%	5%	\$754.84	2.30	2.36	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.05	45	\$1.55	76%	76%	\$278.17	-0.03	-0.03	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.64	45	\$1.55	76%	76%	\$278.17	0.24	0.25	INS_FLR-Heating-RTF-SFv3.7-7
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	-0.01	45	\$1.37	0%	0%	\$1,670.86	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.09	45	\$1.37	0%	0%	\$1,670.86	0.00	0.00	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	New	-0.02	70	\$0.95	6%	56%	\$149.27	-1.29	-1.31	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	New	0.67	70	\$0.95	6%	56%	\$149.27	33.41	34.28	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.02	70	\$0.95	2%	19%	\$149.27	-0.43	-0.44	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.67	70	\$0.95	2%	19%	\$149.27	11.14	11.43	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	New	55.92	18	\$528.00	79%	80%	\$230.73	0.07	0.07	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	New	228.29	18	\$528.00	79%	80%	\$230.73	0.28	0.30	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$645.73	46%	56%	\$90.62	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Ducting - Repair and Sealing	household	New	851.43	20	\$645.73	46%	56%	\$90.62	14.24	14.84	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.09	10	\$0.55	15%	19%	\$284.87	0.86	0.90	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.22	10	\$0.55	15%	19%	\$284.87	2.35	2.45	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.01	15	\$0.78	53%	56%	\$278.76	0.04	0.04	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.36	15	\$0.78	53%	56%	\$278.76	1.42	1.46	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	15	\$0.66	18%	19%	\$239.24	0.02	0.02	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.36	15	\$0.66	18%	19%	\$239.24	1.55	1.59	INF_CTRL-Heating-7PLN-SFv7-2
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.07	15	\$0.67	18%	19%	\$257.32	0.32	0.32	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.27	15	\$0.67	18%	19%	\$257.32	0.87	0.89	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.93	45	\$21.76	43%	68%	\$308.04	11.40	11.56	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.45	45	\$21.76	43%	68%	\$308.04	60.44	62.03	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	5%	8%	\$156.12	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	New	7.96	20	\$10.51	5%	8%	\$156.12	8.29	8.51	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.72	10	\$3.73	12%	56%	\$812.24	12.34	12.55	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	New	281.56	15	\$1,692.66	4%	19%	\$173.05	13.72	13.88	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	New	1,009.99	15	\$1,692.66	4%	19%	\$173.05	37.57	38.46	WND_CELLSHD-HVAC-E3T-474-1

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Single Family	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	70%	80%	\$246.28	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	New	7.92	45	\$18.64	70%	80%	\$246.28	3.55	3.64	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	New	85.32	30	\$59.05	70%	80%	\$76.00	3.52	3.54	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	70%	80%	\$76.00	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	71.76	15	\$4,269.72	38%	75%	\$373.01	4.63	4.63	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,337.51	15	\$4,269.72	38%	75%	\$373.01	49.20	49.20	DHP-Heating-RTF-SFv4.1-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	110.82	15	\$4,031.10	23%	45%	\$137.32	2.08	2.16	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,041.01	15	\$4,031.10	23%	45%	\$137.32	82.31	82.31	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	959.72	20	\$1,348.08	0%	15%	\$166.14	53.74	54.39	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,446.06	15	\$3,379.23	0%	0%	\$160.07	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	New	261.35	2	\$80.50	45%	75%	\$154.35	0.77	0.77	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	761.18	3	\$18.46	25%	50%	\$8.68	11.47	11.47	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	68.29	6	\$285.43	45%	75%	\$921.55	1.03	1.07	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.66	15	\$601.89	25%	75%	\$125.58	0.07	0.07	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	629.36	15	\$601.89	25%	75%	\$125.58	62.41	63.28	ASHP_MNT-Heating-RTF-SFv3.4-1

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Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	371.70	15	\$8,271.00	5%	20%	\$361.89	28.50	29.04	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,003.77	15	\$8,271.00	5%	20%	\$361.89	77.31	78.75	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,669.05	15	\$8,271.00	5%	20%	\$361.89	132.25	132.95	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.21	10	\$48.72	50%	75%	\$684.36	1.65	1.67	FN_WH-Cooling-CPUC-1
Single Family	Cooling	Whole-House Fan - Installation	household	New	47.02	20	\$737.07	15%	40%	\$1,831.75	3.36	3.41	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	New	7.71	5	\$254.58	4%	56%	\$141.95	0.75	0.76	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	New	433.73	5	\$254.58	4%	56%	\$141.95	32.09	33.02	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	New	75.65	5	\$485.43	1%	19%	\$165.68	2.44	2.48	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	New	577.46	5	\$485.43	1%	19%	\$165.68	14.24	14.65	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	New	19.31	5	\$485.43	1%	19%	\$165.68	2.24	2.61	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	New	15.60	5	\$485.43	1%	19%	\$165.68	0.58	0.69	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	New	29.45	5	\$485.43	1%	19%	\$165.68	5.81	3.93	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	238.84	40	\$864.21	1%	10%	\$384.36	14.61	14.70	DHW_DWHR-Water Heating-7PLN-v3-1

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Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	114.69	15	\$5.30	43%	50%	(\$171.27)	13.13	13.24	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	65%	75%	(\$336.01)	5.42	5.50	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$17.19	32.78	33.19	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,457.41	20	\$1,175.39	0%	0%	\$95.61	2.67	2.69	DHW_DSH-Water Heating-RTF-v2.2-1
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$32.16	1.69	1.73	DHW_STBK-Water Heating-ILTRM-v4.0-3
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$50.07	9.18	9.31	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	New	1,204.05	20	\$9,127.71	2%	30%	\$898.71	326.59	328.26	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	New	334.60	12	\$72.03	1%	10%	\$38.48	18.62	18.74	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	New	-58.44	12	\$72.03	1%	10%	\$38.48	-1.75	-1.77	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	121.52	8	\$102.48	0%	5%	\$220.96	2.70	3.34	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.14	15	\$10.55	3%	50%	\$78.61	11.94	14.22	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.05	3	\$28.71	1%	30%	\$530.06	1.23	1.70	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.57	10	\$19.80	0%	50%	\$237.12	7.58	9.28	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.39	7	\$222.66	0%	75%	\$203.02	46.57	46.57	RFG_DEC-Appliances-RTF-v5.1-1

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Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	238.82	6	\$145.11	0%	50%	\$129.81	47.56	47.56	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	34.98	5	\$37.31	8%	25%	\$255.91	5.27	5.22	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	67.05	5	\$50.76	8%	25%	\$181.63	10.10	10.01	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	1%	75%	\$3.61	14.60	14.60	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,336.46	20	\$3,900.44	0%	30%	\$338.83	0.55	0.55	PLHT_SOL-Miscellaneous-AEG-1
Single Family	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$143.77	6.19	6.19	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	3.93	16	\$179.25	0%	30%	\$8,645.95	2.26	2.57	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	New	136.12	45	\$6,198.54	14%	68%	\$566.75	89.66	90.16	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	New	730.97	45	\$6,198.54	14%	68%	\$566.75	471.14	477.42	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	New	26.85	45	\$6,198.54	14%	68%	\$566.75	17.42	17.54	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	357.59	45	\$6,198.54	14%	68%	\$566.75	143.96	154.73	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	591.71	20	\$15,574.39	2%	8%	\$276.55	29.76	29.93	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	2,122.56	20	\$15,574.39	2%	8%	\$276.55	104.46	105.85	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,359.75	20	\$15,574.39	2%	8%	\$276.55	67.37	67.80	RES_ADVNC_ZNE-AII-PGE-3

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Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	501.78	20	\$15,574.39	2%	8%	\$276.55	15.43	16.51	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	135.11	20	\$15,574.39	2%	8%	\$276.55	4.03	4.35	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,153.29	20	\$15,574.39	2%	8%	\$276.55	60.05	59.60	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	319.84	20	\$15,574.39	2%	8%	\$276.55	16.57	16.48	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	395.44	20	\$15,574.39	2%	8%	\$276.55	42.73	34.33	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Cooling	Behavioral Programs	household	New	2.83	5	\$33.89	14%	36%	\$51.01	0.13	0.13	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	New	10.16	5	\$33.89	14%	36%	\$51.01	0.36	0.37	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	New	133.01	5	\$33.89	14%	36%	\$51.01	8.82	9.03	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	New	25.73	5	\$33.89	14%	36%	\$51.01	4.21	6.13	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$51.01	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$51.01	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$51.01	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$51.01	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.50	45	\$0.78	14%	38%	\$57.76	80.09	82.44	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.89	45	\$0.78	14%	38%	\$57.76	301.39	303.40	INS_CLG-Heating-RTF-MFv3.4-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.08	45	\$1.15	14%	38%	\$325.81	12.37	12.73	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.29	45	\$1.15	14%	38%	\$325.81	97.50	98.14	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	Existing	29.47	15	\$313.28	4%	19%	\$409.67	6.37	6.56	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	Existing	70.99	15	\$313.28	4%	19%	\$409.67	32.42	32.63	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.05	45	\$1.63	0%	4%	\$185.63	3.28	3.37	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	0.85	45	\$1.63	0%	4%	\$185.63	110.19	110.92	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.03	20	\$0.92	11%	11%	\$489.84	0.00	0.00	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.18	20	\$0.92	11%	11%	\$489.84	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.05	50	\$1.37	4%	4%	\$851.24	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.12	50	\$1.37	4%	4%	\$851.24	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	Existing	-0.04	45	\$1.04	14%	60%	\$495.79	-12.56	-12.93	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	Existing	0.26	45	\$1.04	14%	60%	\$495.79	168.77	169.89	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	-0.01	45	\$0.92	0%	0%	\$258.87	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.37	45	\$0.92	0%	0%	\$258.87	0.00	0.00	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	Existing	-0.01	70	\$0.95	0%	0%	\$374.82	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	Existing	0.27	70	\$0.95	0%	0%	\$374.82	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	-0.01	70	\$0.95	0%	0%	\$374.82	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	0.27	70	\$0.95	0%	0%	\$374.82	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	Existing	17.63	18	\$528.00	3%	60%	\$3,915.94	3.94	4.35	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	Existing	0.00	18	\$528.00	3%	60%	\$3,915.94	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$322.87	23%	56%	\$108.67	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	Existing	354.53	20	\$322.87	23%	56%	\$108.67	107.32	111.69	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.12	10	\$0.55	8%	19%	\$256.48	4.58	4.99	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.23	10	\$0.55	8%	19%	\$256.48	21.11	21.87	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.01	15	\$0.78	38%	56%	\$595.39	2.50	2.58	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.16	15	\$0.78	38%	56%	\$595.39	145.67	146.64	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.01	15	\$0.66	13%	19%	\$290.48	0.48	0.50	INF_CTRL-Cooling-7PLN-SFv7-6
Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.29	15	\$0.66	13%	19%	\$290.48	50.68	51.02	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.09	15	\$0.67	13%	19%	\$290.18	5.04	5.14	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.21	15	\$0.67	13%	19%	\$290.18	27.27	27.39	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.96	45	\$21.76	24%	68%	\$408.42	60.14	61.90	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	4.55	45	\$21.76	24%	68%	\$408.42	601.22	605.21	WND_HE-Heating-RTF-SFv3.7-1

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Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$218.23	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	5.62	20	\$10.51	3%	8%	\$218.23	82.47	83.02	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.95	10	\$3.73	25%	56%	\$631.64	41.96	43.19	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	Existing	218.75	15	\$958.59	8%	19%	\$168.86	32.37	33.18	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	Existing	526.98	15	\$958.59	8%	19%	\$168.86	168.36	169.32	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	70%	80%	\$635.21	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	Existing	3.03	45	\$18.64	70%	80%	\$635.21	19.37	19.50	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	Existing	63.19	30	\$59.05	70%	80%	\$104.36	8.51	8.67	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	70%	80%	\$104.36	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	81.29	15	\$4,269.72	1%	75%	\$708.53	70.19	70.31	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	650.03	15	\$4,269.72	1%	75%	\$708.53	1,056.98	1,056.98	DHP-Heating-RTF-SFv4.1-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	87.39	15	\$4,269.72	1%	45%	\$502.01	5.58	6.01	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	967.49	15	\$4,269.72	1%	45%	\$502.01	320.38	320.38	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	383.79	20	\$1,348.08	0%	0%	\$410.08	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	1,129.05	15	\$3,379.23	0%	23%	\$346.79	190.29	190.29	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	Existing	120.63	2	\$80.50	1%	75%	\$334.39	65.20	65.20	FURN_MNT-Heating-AEG-2

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Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	862.24	3	\$18.46	0%	50%	\$7.69	499.83	500.69	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	53.85	6	\$285.43	1%	75%	\$1,211.31	5.65	5.97	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.42	15	\$601.89	65%	75%	\$315.41	0.01	0.01	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	256.01	15	\$601.89	65%	75%	\$315.41	6.76	6.99	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	250.07	15	\$4,104.00	0%	20%	\$246.26	21.39	22.32	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	518.15	15	\$4,104.00	0%	20%	\$246.26	48.51	49.43	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,524.22	15	\$4,104.00	0%	20%	\$246.26	135.47	139.21	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	11.06	10	\$48.72	40%	75%	\$705.36	10.58	10.78	FN_WH-Cooling-CPUC-1
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	34.83	20	\$737.07	2%	10%	\$2,515.30	4.35	4.48	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	Existing	5.71	5	\$254.58	4%	38%	\$345.50	2.76	2.83	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	Existing	173.45	5	\$254.58	4%	38%	\$345.50	181.39	182.42	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	Existing	58.78	5	\$485.43	1%	13%	\$298.33	9.49	9.73	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	Existing	301.30	5	\$485.43	1%	13%	\$298.33	105.03	105.63	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

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Multifamily	Interior Lighting	Connected Home Control System	household	Existing	8.02	5	\$485.43	1%	13%	\$298.33	5.91	7.20	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	Existing	4.78	5	\$485.43	1%	13%	\$298.33	1.65	1.80	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	Existing	28.51	5	\$485.43	1%	13%	\$298.33	15.55	15.88	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	194.15	40	\$864.21	0%	0%	\$493.27	0.00	0.00	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	54.86	15	\$5.30	13%	50%	(\$373.56)	125.58	130.90	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	92.75	10	\$0.01	19%	75%	(\$253.47)	214.35	229.84	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.39	15	\$3.37	12%	75%	\$18.37	252.97	271.25	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	1,308.18	20	\$1,175.39	0%	0%	\$111.12	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	79.62	2	\$5.13	41%	75%	\$34.37	86.78	93.05	DHW_STBK-Water Heating-ILTRM-v4.0-3
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	52.39	10	\$16.82	16%	45%	\$53.51	63.62	68.22	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	978.74	20	\$9,127.71	1%	10%	\$1,153.35	134.44	138.20	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	Existing	271.99	12	\$72.03	0%	28%	\$44.82	229.72	236.99	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	Existing	-23.37	12	\$72.03	0%	28%	\$44.82	-20.12	-20.18	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.68	8	\$102.48	0%	10%	\$267.07	24.62	33.67	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

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Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.68	15	\$10.55	1%	50%	\$72.69	37.09	42.52	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.57	3	\$28.71	1%	30%	\$367.60	16.31	18.70	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.48	10	\$19.80	1%	50%	\$219.26	27.94	32.04	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	209.79	7	\$222.66	0%	75%	\$214.79	15.57	16.13	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	50%	\$134.18	9.27	9.46	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	27.72	5	\$37.31	8%	25%	\$346.44	37.85	38.49	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	53.13	5	\$50.76	8%	25%	\$245.88	72.55	73.78	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	0.00	10	\$19.59	1%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,900.44	0%	30%	\$0.00	0.00	0.00	PLHT_SOL-Miscellaneous-AEG-1
Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	Existing	0.00	5	\$835.50	0%	30%	\$0.00	0.00	0.00	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.23	16	\$179.25	0%	30%	\$9,999.00	5.66	6.18	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3

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Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	377.87	20	\$7,727.88	0%	0%	\$254.81	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	812.33	20	\$7,727.88	0%	0%	\$254.81	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,106.96	20	\$7,727.88	0%	0%	\$254.81	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	240.30	20	\$7,727.88	0%	0%	\$254.81	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	47.78	20	\$7,727.88	0%	0%	\$254.81	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	664.78	20	\$7,727.88	0%	0%	\$254.81	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	215.79	20	\$7,727.88	0%	0%	\$254.81	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	276.06	20	\$7,727.88	0%	0%	\$254.81	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Cooling	Behavioral Programs	household	Existing	1.76	5	\$33.89	14%	36%	\$71.86	0.99	1.02	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	Existing	4.24	5	\$33.89	14%	36%	\$71.86	4.97	5.01	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	Existing	108.12	5	\$33.89	14%	36%	\$71.86	129.84	140.56	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	10.96	5	\$33.89	14%	36%	\$71.86	27.24	44.14	RES_BEHAV-HVAC-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$71.86	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$71.86	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$71.86	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$71.86	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.44	45	\$0.78	9%	38%	\$60.75	3.66	3.66	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.89	45	\$0.78	9%	38%	\$60.75	14.90	15.33	INS_CLG-Heating-RTF-MFv3.4-4
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.07	45	\$1.15	9%	38%	\$350.32	0.56	0.56	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.28	45	\$1.15	9%	38%	\$350.32	4.61	4.75	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	New	24.53	15	\$313.28	1%	5%	\$540.09	0.06	0.06	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	New	51.96	15	\$313.28	1%	5%	\$540.09	0.24	0.25	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.05	45	\$1.63	0%	0%	\$198.20	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	0.82	45	\$1.63	0%	0%	\$198.20	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.92	11%	15%	\$661.76	0.07	0.07	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.14	20	\$0.92	11%	15%	\$661.76	0.67	0.69	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.04	50	\$1.37	4%	5%	\$1,122.22	0.03	0.03	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.09	50	\$1.37	4%	5%	\$1,122.22	0.14	0.15	INS_WLS_SIDING-HVAC-E3T-287-1

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Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	New	-0.04	45	\$1.04	31%	75%	\$523.48	-0.45	-0.45	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	New	0.24	45	\$1.04	31%	75%	\$523.48	6.33	6.51	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	New	-0.01	45	\$0.92	0%	0%	\$263.42	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.37	45	\$0.92	0%	0%	\$263.42	0.00	0.00	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	New	-0.01	70	\$0.95	0%	0%	\$398.07	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	New	0.26	70	\$0.95	0%	0%	\$398.07	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	-0.01	70	\$0.95	0%	0%	\$398.07	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	0.26	70	\$0.95	0%	0%	\$398.07	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	New	14.59	18	\$528.00	15%	80%	\$4,511.11	0.17	0.18	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	New	0.00	18	\$528.00	15%	80%	\$4,511.11	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$322.87	23%	56%	\$86.40	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	New	441.89	20	\$322.87	23%	56%	\$86.40	5.73	5.88	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.11	10	\$0.55	8%	19%	\$256.50	0.21	0.21	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.24	10	\$0.55	8%	19%	\$256.50	0.95	0.98	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.02	15	\$0.78	55%	56%	\$216.41	0.00	0.00	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.46	15	\$0.78	55%	56%	\$216.41	0.16	0.17	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.01	15	\$0.66	18%	19%	\$309.59	0.00	0.00	INF_CTRL-Cooling-7PLN-SFv7-6

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Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.28	15	\$0.66	18%	19%	\$309.59	0.18	0.18	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.07	15	\$0.67	18%	19%	\$382.56	0.02	0.02	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.16	15	\$0.67	18%	19%	\$382.56	0.10	0.10	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	1.06	45	\$21.76	34%	68%	\$420.42	2.25	2.25	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	4.35	45	\$21.76	34%	68%	\$420.42	18.48	19.02	WND_HE-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	4%	8%	\$232.38	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	New	5.37	20	\$10.51	4%	8%	\$232.38	2.53	2.61	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.83	10	\$3.73	40%	56%	\$705.41	0.68	0.68	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	New	182.08	15	\$958.59	13%	19%	\$222.61	0.75	0.75	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	New	385.72	15	\$958.59	13%	19%	\$222.61	3.22	3.30	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	80%	80%	\$647.31	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	New	3.02	45	\$18.64	80%	80%	\$647.31	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	New	55.17	30	\$59.05	80%	80%	\$116.55	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	80%	80%	\$116.55	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	64.15	15	\$4,269.72	38%	75%	\$1,144.47	1.86	1.86	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	395.16	15	\$4,269.72	38%	75%	\$1,144.47	21.80	21.80	DHP-Heating-RTF-SFv4.1-1

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Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	63.81	15	\$4,031.10	23%	45%	\$483.10	0.15	0.15	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	967.49	15	\$4,031.10	23%	45%	\$483.10	10.83	10.83	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	366.52	20	\$1,348.08	0%	15%	\$436.66	12.60	12.79	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	1,129.05	15	\$3,379.23	0%	0%	\$346.79	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	New	120.63	2	\$80.50	45%	75%	\$334.39	0.15	0.15	FURN_MNT-Heating-AEG-2
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	680.40	3	\$18.46	25%	50%	\$9.71	4.63	4.63	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	39.32	6	\$285.43	45%	75%	\$1,600.38	0.07	0.07	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.43	15	\$601.89	25%	75%	\$304.05	0.00	0.00	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	259.75	15	\$601.89	25%	75%	\$304.05	2.37	2.40	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	231.03	15	\$4,104.00	5%	20%	\$254.30	3.50	3.57	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	520.96	15	\$4,104.00	5%	20%	\$254.30	8.12	8.23	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,391.98	15	\$4,104.00	5%	20%	\$254.30	21.86	21.98	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.20	10	\$48.72	50%	75%	\$679.26	0.35	0.35	FN_WH-Cooling-CPUC-1

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Multifamily	Cooling	Whole-House Fan - Installation	household	New	30.41	20	\$737.07	2%	10%	\$2,809.06	0.17	0.17	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	New	4.98	5	\$254.58	4%	38%	\$368.43	0.07	0.07	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	New	165.64	5	\$254.58	4%	38%	\$368.43	4.78	4.93	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	New	48.92	5	\$485.43	1%	13%	\$387.56	0.23	0.23	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	New	220.53	5	\$485.43	1%	13%	\$387.56	2.12	2.19	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Interior Lighting	Connected Home Control System	household	New	9.88	5	\$485.43	1%	13%	\$387.56	0.22	0.25	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	New	5.88	5	\$485.43	1%	13%	\$387.56	0.06	0.06	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	New	27.52	5	\$485.43	1%	13%	\$387.56	0.44	0.44	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	199.19	40	\$864.21	0%	0%	\$461.19	0.00	0.00	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	56.20	15	\$5.30	9%	50%	(\$349.78)	9.61	9.68	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	14%	75%	(\$237.34)	8.65	8.77	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$17.20	11.59	11.73	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	1,215.47	20	\$1,175.39	0%	0%	\$114.72	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$32.19	0.60	0.61	DHW_STBK-Water Heating-ILTRM-v4.0-3

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Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$50.10	2.35	2.38	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	New	1,004.17	20	\$9,127.71	1%	10%	\$1,078.34	25.17	25.30	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	New	279.05	12	\$72.03	0%	0%	\$41.40	0.00	0.00	RCIRCMPM_UPG-AII-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	New	-22.32	12	\$72.03	0%	0%	\$41.40	0.00	0.00	RCIRCMPM_UPG-AII-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	122.54	8	\$102.48	2%	10%	\$245.02	0.66	0.83	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.31	15	\$10.55	0%	50%	\$65.94	1.78	1.90	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.24	3	\$28.71	1%	30%	\$444.62	0.17	0.20	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.70	10	\$19.80	0%	50%	\$198.90	1.07	1.16	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.39	7	\$222.66	0%	75%	\$203.02	0.83	0.83	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	238.82	6	\$145.11	0%	50%	\$129.81	0.43	0.43	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	24.94	5	\$37.31	8%	25%	\$358.74	1.25	1.24	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	47.80	5	\$50.76	8%	25%	\$254.62	2.39	2.37	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	0.00	10	\$19.59	1%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,900.44	0%	30%	\$0.00	0.00	0.00	PLHT_SOL-Miscellaneous-AEG-1

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Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	New	0.00	5	\$835.50	0%	30%	\$0.00	0.00	0.00	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	1.48	16	\$179.25	0%	30%	\$9,999.00	0.36	0.38	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	New	7.65	45	\$6,198.54	14%	68%	\$9,999.00	1.41	1.41	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	New	16.21	45	\$6,198.54	14%	68%	\$9,999.00	2.85	2.90	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	22.68	45	\$6,198.54	14%	68%	\$9,999.00	4.04	4.06	ESTARH-Water Heating-RTF-SFWAv3.1-3
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	5.14	45	\$6,198.54	14%	68%	\$9,999.00	0.50	0.54	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	382.65	20	\$7,727.88	2%	8%	\$244.23	5.38	5.37	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	810.61	20	\$7,727.88	2%	8%	\$244.23	10.88	11.05	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,134.02	20	\$7,727.88	2%	8%	\$244.23	15.42	15.51	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	256.79	20	\$7,727.88	2%	8%	\$244.23	1.93	2.05	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	50.93	20	\$7,727.88	2%	8%	\$244.23	0.53	0.55	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	672.85	20	\$7,727.88	2%	8%	\$244.23	9.68	9.58	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	228.03	20	\$7,727.88	2%	8%	\$244.23	3.25	3.23	RES_ADVNC_ZNE-AII-PGE-3

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Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	280.47	20	\$7,727.88	2%	8%	\$244.23	3.91	3.92	RES_ADVNC_ZNE-All-PGE-3
Multifamily	Cooling	Behavioral Programs	household	New	1.83	5	\$33.89	14%	36%	\$67.02	0.02	0.02	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	New	3.88	5	\$33.89	14%	36%	\$67.02	0.08	0.08	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	New	110.93	5	\$33.89	14%	36%	\$67.02	2.55	2.60	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	New	13.17	5	\$33.89	14%	36%	\$67.02	0.61	0.96	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$67.02	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$67.02	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$67.02	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$67.02	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.19	45	\$0.78	10%	38%	\$90.36	179.68	188.67	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	0.71	45	\$0.78	10%	38%	\$90.36	822.08	837.78	INS_CLG-Heating-RTF-MFv3.4-4
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.03	25	\$1.03	10%	38%	\$361.21	27.75	29.14	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.30	25	\$1.03	10%	38%	\$361.21	349.08	355.75	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	Existing	34.85	15	\$978.30	4%	19%	\$614.68	12.38	13.00	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	Existing	175.90	15	\$978.30	4%	19%	\$614.68	76.60	78.06	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.06	45	\$1.63	0%	4%	\$84.54	6.37	6.68	INS_WLC-Cooling-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.95	45	\$1.63	0%	4%	\$84.54	260.34	265.31	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.03	20	\$0.92	11%	11%	\$305.39	0.00	0.00	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.33	20	\$0.92	11%	11%	\$305.39	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.05	50	\$1.37	4%	4%	\$443.45	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.27	50	\$1.37	4%	4%	\$443.45	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.03	45	\$1.04	7%	30%	\$287.55	-12.20	-12.81	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.41	45	\$1.04	7%	30%	\$287.55	199.37	203.18	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$1.37	7%	30%	\$811.25	-1.89	-1.99	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.20	25	\$1.37	7%	30%	\$811.25	97.72	99.59	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$231.41	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.43	70	\$0.95	0%	0%	\$231.41	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$231.41	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.43	70	\$0.95	0%	0%	\$231.41	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	Existing	62.94	18	\$528.00	48%	60%	\$214.15	6.95	7.67	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	Existing	245.99	18	\$528.00	48%	60%	\$214.15	53.45	55.64	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	18	\$442.54	23%	56%	\$64.31	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1

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Mobile Home	Space Heating	Ducting - Repair and Sealing	household	Existing	853.38	18	\$442.54	23%	56%	\$64.31	528.39	550.03	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.11	10	\$0.55	8%	19%	\$182.20	16.98	18.47	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.38	10	\$0.55	8%	19%	\$182.20	108.93	112.86	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.01	15	\$0.78	50%	56%	\$424.77	1.72	1.81	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.24	15	\$0.78	50%	56%	\$424.77	80.03	81.56	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	25	\$0.78	17%	19%	\$440.19	0.33	0.35	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.20	25	\$0.78	17%	19%	\$440.19	18.36	18.71	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.10	15	\$0.67	17%	19%	\$151.17	3.58	3.69	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.49	15	\$0.67	17%	19%	\$151.17	22.35	22.63	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.71	45	\$21.76	8%	68%	\$293.51	160.22	168.25	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	7.03	45	\$21.76	8%	68%	\$293.51	1,947.49	1,984.68	WND_HE-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.42	1%	8%	\$199.53	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	6.15	20	\$10.42	1%	8%	\$199.53	189.40	193.02	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.70	10	\$3.73	12%	56%	\$872.09	116.25	122.07	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	Existing	258.74	15	\$1,538.71	4%	19%	\$130.23	90.63	94.48	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	Existing	1,305.82	15	\$1,538.71	4%	19%	\$130.23	562.78	572.12	WND_CELLSHD-HVAC-E3T-474-1

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Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	60%	80%	\$258.64	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	Existing	7.51	45	\$18.64	60%	80%	\$258.64	91.53	93.28	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	Existing	74.74	30	\$59.05	60%	80%	\$89.76	34.06	35.11	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	60%	80%	\$89.76	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	76.83	15	\$4,269.72	0%	75%	\$301.07	60.26	60.35	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,643.82	15	\$4,269.72	0%	75%	\$301.07	1,353.53	1,353.53	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	132.63	15	\$4,269.72	0%	45%	\$204.89	22.85	24.60	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	2,446.62	15	\$4,269.72	0%	45%	\$204.89	1,576.71	1,576.71	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	951.01	20	\$1,348.08	0%	0%	\$166.98	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,855.18	15	\$3,379.23	0%	23%	\$147.26	925.57	925.57	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	Existing	305.06	2	\$80.50	7%	75%	\$132.23	293.43	293.43	FURN_MNT-Heating-AEG-2
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	814.89	3	\$18.46	0%	50%	\$8.13	426.10	426.79	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	81.73	6	\$285.43	7%	75%	\$797.74	21.14	22.32	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.64	15	\$601.89	65%	75%	\$117.05	0.04	0.04	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	684.78	15	\$601.89	65%	75%	\$117.05	41.27	42.30	ASHP_MNT-Heating-RTF-SFv3.4-1

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Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	379.69	15	\$6,408.00	0%	20%	\$273.42	65.66	68.46	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,306.24	15	\$6,408.00	0%	20%	\$273.42	246.44	251.12	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,518.34	15	\$6,408.00	0%	20%	\$273.42	271.84	279.39	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.98	10	\$48.72	40%	75%	\$723.13	17.81	18.37	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	41.19	20	\$737.07	15%	40%	\$2,163.48	24.89	26.13	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	Existing	6.75	5	\$254.58	4%	56%	\$143.04	8.45	8.81	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	Existing	429.79	5	\$254.58	4%	56%	\$143.04	661.54	672.52	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	Existing	69.52	5	\$485.43	1%	19%	\$139.25	28.99	30.22	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	Existing	746.59	5	\$485.43	1%	19%	\$139.25	383.05	389.41	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Interior Lighting	Connected Home Control System	household	Existing	11.72	5	\$485.43	1%	19%	\$139.25	17.12	20.87	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	Existing	5.38	5	\$485.43	1%	19%	\$139.25	2.82	3.39	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	Existing	24.43	5	\$485.43	1%	19%	\$139.25	53.48	43.14	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	193.40	40	\$864.21	0%	0%	\$495.47	0.00	0.00	DHW_DWHR-Water Heating-7PLN-v3-1

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Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	103.27	15	\$5.30	28%	50%	(\$182.68)	248.14	258.72	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	92.71	10	\$0.01	42%	75%	(\$331.70)	149.94	160.85	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.38	15	\$3.37	12%	75%	\$18.39	299.35	321.15	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,303.13	20	\$1,175.39	0%	0%	\$111.61	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	79.59	2	\$5.13	41%	75%	\$34.41	102.69	110.17	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	52.36	10	\$16.82	16%	45%	\$53.56	75.29	80.77	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	974.97	20	\$9,127.71	0%	20%	\$1,158.51	352.46	362.39	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	Existing	270.94	12	\$72.03	0%	17%	\$52.77	160.13	165.23	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	Existing	-57.91	12	\$72.03	0%	17%	\$52.77	-27.22	-27.49	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.63	8	\$102.48	0%	10%	\$260.75	31.80	43.29	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.57	15	\$10.55	7%	50%	\$86.03	63.45	83.10	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.40	3	\$28.71	1%	30%	\$435.07	31.75	41.58	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.39	10	\$19.80	0%	50%	\$259.50	54.91	71.92	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	205.32	7	\$222.66	0%	75%	\$230.14	252.42	272.56	RFG_DEC-Appliances-RTF-v5.1-1

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Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	50%	\$134.18	355.71	362.92	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.72	5	\$37.31	8%	25%	\$246.29	66.33	67.28	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	74.22	5	\$50.76	8%	25%	\$174.81	127.16	128.97	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	1%	75%	\$3.72	59.88	60.95	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,900.44	0%	30%	\$0.00	0.00	0.00	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$140.93	41.98	42.74	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.39	16	\$179.25	0%	30%	\$9,999.00	6.23	7.50	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	448.13	20	\$12,066.34	0%	0%	\$251.67	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	2,013.93	20	\$12,066.34	0%	0%	\$251.67	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,101.01	20	\$12,066.34	0%	0%	\$251.67	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	310.79	20	\$12,066.34	0%	0%	\$251.67	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	47.58	20	\$12,066.34	0%	0%	\$251.67	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,217.77	20	\$12,066.34	0%	0%	\$251.67	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	313.15	20	\$12,066.34	0%	0%	\$251.67	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	331.61	20	\$12,066.34	0%	0%	\$251.67	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	Existing	2.08	5	\$33.89	14%	36%	\$66.47	1.91	2.01	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	Existing	10.52	5	\$33.89	14%	36%	\$66.47	11.78	12.02	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	Existing	107.70	5	\$33.89	14%	36%	\$66.47	153.12	165.86	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	16.02	5	\$33.89	14%	36%	\$66.47	50.70	80.78	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$66.47	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$66.47	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$66.47	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	36%	\$66.47	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.17	45	\$0.78	29%	38%	\$90.65	2.37	2.36	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	New	0.71	45	\$0.78	29%	38%	\$90.65	11.64	11.71	INS_CLG-Heating-RTF-MFv3.4-4

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Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.03	25	\$1.03	29%	38%	\$358.63	0.37	0.36	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.30	25	\$1.03	29%	38%	\$358.63	4.94	4.97	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	New	29.32	15	\$978.30	1%	5%	\$801.38	0.12	0.12	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	New	129.69	15	\$978.30	1%	5%	\$801.38	0.60	0.60	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.05	45	\$1.63	0%	0%	\$87.11	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.88	45	\$1.63	0%	0%	\$87.11	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.02	20	\$0.92	11%	15%	\$404.81	0.10	0.10	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.24	20	\$0.92	11%	15%	\$404.81	1.29	1.29	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.04	50	\$1.37	4%	5%	\$578.15	0.07	0.07	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.20	50	\$1.37	4%	5%	\$578.15	0.35	0.35	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.03	45	\$1.04	33%	38%	\$294.76	-0.09	-0.09	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.39	45	\$1.04	33%	38%	\$294.76	1.50	1.51	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$1.37	33%	38%	\$797.60	-0.01	-0.01	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.20	25	\$1.37	33%	38%	\$797.60	0.77	0.77	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$237.81	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	New	0.41	70	\$0.95	0%	0%	\$237.81	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$237.81	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.41	70	\$0.95	0%	0%	\$237.81	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	New	53.46	18	\$528.00	49%	80%	\$205.94	0.77	0.78	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	New	258.27	18	\$528.00	49%	80%	\$205.94	6.55	6.63	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	0.00	18	\$442.54	22%	56%	\$62.59	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Space Heating	Ducting - Repair and Sealing	household	New	860.06	18	\$442.54	22%	56%	\$62.59	23.86	24.14	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.09	10	\$0.55	7%	19%	\$232.41	0.71	0.72	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.28	10	\$0.55	7%	19%	\$232.41	3.82	3.86	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.02	15	\$0.78	56%	56%	\$398.09	0.00	0.00	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.24	15	\$0.78	56%	56%	\$398.09	0.00	0.00	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	25	\$0.78	19%	19%	\$434.51	0.00	0.00	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.20	25	\$0.78	19%	19%	\$434.51	0.00	0.00	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.08	15	\$0.67	19%	19%	\$197.09	0.00	0.00	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.36	15	\$0.67	19%	19%	\$197.09	0.00	0.00	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.79	25	\$21.76	50%	68%	\$328.97	2.39	2.37	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.76	25	\$21.76	50%	68%	\$328.97	23.68	23.81	WND_HE-Heating-RTF-SFv3.7-1

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Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.42	6%	8%	\$196.58	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	New	6.18	20	\$10.42	6%	8%	\$196.58	2.41	2.42	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.61	10	\$3.73	12%	56%	\$942.73	3.72	3.69	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	New	217.68	15	\$1,538.71	4%	19%	\$169.78	4.15	4.13	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	New	962.78	15	\$1,538.71	4%	19%	\$169.78	21.27	21.37	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	70%	80%	\$254.70	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	New	7.55	45	\$18.64	70%	80%	\$254.70	2.00	2.01	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	New	65.96	30	\$59.05	70%	80%	\$97.03	1.07	1.06	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	70%	80%	\$97.03	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	70.86	15	\$4,269.72	38%	75%	\$418.60	1.85	1.85	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,184.93	15	\$4,269.72	38%	75%	\$418.60	32.86	32.86	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	98.50	15	\$4,031.10	23%	45%	\$267.24	0.62	0.63	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	1,763.62	15	\$4,031.10	23%	45%	\$267.24	37.96	37.96	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	914.85	20	\$1,348.08	0%	15%	\$171.81	30.45	30.54	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,058.13	15	\$3,379.23	0%	0%	\$204.29	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	New	219.90	2	\$80.50	45%	75%	\$183.44	0.52	0.52	FURN_MNT-Heating-AEG-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	751.65	3	\$18.46	25%	50%	\$8.79	4.61	4.61	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	60.70	6	\$285.43	45%	75%	\$1,019.03	0.31	0.31	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.53	15	\$601.89	25%	75%	\$138.71	0.01	0.01	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	563.35	15	\$601.89	25%	75%	\$138.71	11.82	11.82	ASHP_MNT-Heating-RTF-SFv3.4-1
Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	304.89	15	\$6,408.00	5%	20%	\$317.15	9.85	9.89	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	974.94	15	\$6,408.00	5%	20%	\$317.15	31.36	31.54	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,385.00	15	\$6,408.00	5%	20%	\$317.15	43.98	44.20	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.21	10	\$48.72	50%	75%	\$675.82	0.65	0.65	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	36.36	20	\$737.07	15%	40%	\$2,338.73	1.01	1.00	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	New	5.96	5	\$254.58	4%	56%	\$147.29	0.23	0.23	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	New	413.45	5	\$254.58	4%	56%	\$147.29	18.32	18.43	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	New	58.49	5	\$485.43	1%	19%	\$181.22	0.75	0.74	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	New	550.46	5	\$485.43	1%	19%	\$181.22	8.13	8.18	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

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Mobile Home	Interior Lighting	Connected Home Control System	household	New	12.73	5	\$485.43	1%	19%	\$181.22	0.56	0.66	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	New	5.84	5	\$485.43	1%	19%	\$181.22	0.09	0.11	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	New	23.19	5	\$485.43	1%	19%	\$181.22	1.51	1.17	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	198.19	40	\$864.21	1%	10%	\$463.34	5.16	5.19	DHW_DWHR-Water Heating-7PLN-v3-1
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	105.83	15	\$5.30	29%	50%	(\$170.83)	16.83	16.96	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	43%	75%	(\$310.18)	5.36	5.44	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$17.19	13.74	13.91	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,209.37	20	\$1,175.39	0%	0%	\$115.26	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	81.56	2	\$5.13	51%	75%	\$32.17	0.71	0.72	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.66	10	\$16.82	16%	45%	\$50.09	2.78	2.82	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	New	999.13	20	\$9,127.71	0%	20%	\$1,083.38	66.00	66.32	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	New	277.65	12	\$72.03	1%	10%	\$48.08	6.57	6.61	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	New	-55.71	12	\$72.03	1%	10%	\$48.08	-0.99	-1.00	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	122.01	8	\$102.48	0%	10%	\$237.12	1.04	1.31	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.15	15	\$10.55	11%	50%	\$77.47	2.72	3.20	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.05	3	\$28.71	1%	30%	\$522.38	0.34	0.46	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.57	10	\$19.80	3%	50%	\$233.68	1.98	2.40	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.39	7	\$222.66	0%	75%	\$203.02	14.80	14.80	RFG_DEC-Appliances-RTF-v5.1-1
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	238.82	6	\$145.11	0%	50%	\$129.81	16.33	16.33	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	35.26	5	\$37.31	8%	25%	\$253.88	2.19	2.17	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	67.59	5	\$50.76	8%	25%	\$180.19	4.20	4.16	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	1%	75%	\$3.61	3.72	3.72	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,900.44	0%	30%	\$0.00	0.00	0.00	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$143.77	1.58	1.58	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	1.47	16	\$179.25	0%	30%	\$9,999.00	0.36	0.40	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	9.15	45	\$6,198.54	14%	68%	\$8,396.87	2.11	2.10	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	New	40.47	45	\$6,198.54	14%	68%	\$8,396.87	9.15	9.18	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	22.57	45	\$6,198.54	14%	68%	\$8,396.87	4.99	5.02	ESTARH-Water Heating-RTF-SFWAv3.1-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	6.62	45	\$6,198.54	14%	68%	\$8,396.87	0.83	0.90	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	457.47	20	\$12,066.34	2%	8%	\$240.58	8.06	8.03	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	2,023.33	20	\$12,066.34	2%	8%	\$240.58	34.93	35.04	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,128.34	20	\$12,066.34	2%	8%	\$240.58	19.06	19.18	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	330.79	20	\$12,066.34	2%	8%	\$240.58	3.18	3.41	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	50.63	20	\$12,066.34	2%	8%	\$240.58	0.53	0.57	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,235.60	20	\$12,066.34	2%	8%	\$240.58	21.99	21.81	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	329.46	20	\$12,066.34	2%	8%	\$240.58	5.82	5.79	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	330.96	20	\$12,066.34	2%	8%	\$240.58	8.84	7.67	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	New	2.19	5	\$33.89	14%	36%	\$62.70	0.04	0.04	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	New	9.69	5	\$33.89	14%	36%	\$62.70	0.20	0.20	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	New	110.37	5	\$33.89	14%	36%	\$62.70	3.00	3.07	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	New	16.96	5	\$33.89	14%	36%	\$62.70	1.02	1.56	RES_BEHAV-HVAC-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$62.70	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$62.70	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$62.70	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	14%	36%	\$62.70	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

Idaho Residential Measures Assumptions

Table I-2 Summary of Residential Measure Assumptions in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	33.11	14	\$133.62	34%	100%	\$465.31	525.64	530.68	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	6.53	10	\$0.01	20%	100%	\$0.21	78.84	78.84	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	4%	100%	\$62.61	229.77	233.78	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	Existing	70.24	15	\$7,492.42	4%	100%	\$9,999.00	32.48	32.48	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	56.57	14	\$53.94	4%	100%	\$62.61	2,229.23	2,145.38	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,565.40	13	\$694.04	36%	100%	\$28.34	21,351.14	21,351.14	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	3,240.71	12	\$31.27	3%	100%	\$668.13	69.91	80.25	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	Existing	19.94	12	\$1.71	100%	100%	\$16.62	3,535.67	4,169.56	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	4.00	20	\$30.05	100%	100%	\$85.29	1,815.15	1,826.95	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	Existing	22.45	10	\$2.15	100%	100%	\$4.40	3,883.16	3,699.93	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	33.88	12	\$7.97	100%	100%	\$35.72	1,629.42	1,691.80	USDOE SSL Projections - 2016
Single Family	Appliances	Clothes Dryer	1 units	Existing	38.07	15	\$252.88	84%	100%	\$661.72	536.73	536.73	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	92%	100%	\$160.46	1,567.05	1,567.05	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	Existing	14.48	15	\$43.80	100%	100%	\$301.34	178.98	178.98	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	Existing	39.83	21	\$56.02	99%	100%	\$117.60	392.28	392.28	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	Existing	16.09	15	\$43.80	43%	100%	\$271.21	83.87	83.87	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	Existing	175.51	19	\$335.85	78%	100%	\$167.82	2,442.24	2,442.24	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	99%	100%	\$74.55	249.99	249.99	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	74%	100%	\$68.35	647.26	647.26	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	89%	100%	\$25.49	1,117.24	1,117.24	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	247%	100%	\$939.76	296.16	296.16	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	216%	100%	\$0.04	1,208.32	1,208.32	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	74%	100%	\$345.65	80.64	80.64	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	249%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	118.09	10	\$804.14	0%	100%	\$881.11	67.48	67.48	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	Existing	2,264.70	15	\$358.09	2%	100%	\$15.75	1,067.37	1,067.37	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	Existing	2,728.58	15	\$1,513.66	0%	100%	\$55.27	103.28	103.28	PLHT-Miscellaneous-AEG-7
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	195.92	10	\$304.56	6%	100%	\$201.14	397.13	397.13	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	67%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	Existing	183.78	20	\$116.51	29%	100%	\$54.23	1,238.38	1,238.38	AEG Estimate
Single Family	Cooling	Central AC	12 kBtu/hr	New	32.36	14	\$133.62	34%	100%	\$476.17	588.55	592.30	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	6.85	10	\$0.01	20%	100%	\$0.20	37.04	37.04	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	4%	100%	\$56.65	335.99	310.31	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	New	69.19	15	\$7,492.42	4%	100%	\$9,999.00	37.40	37.40	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	93.78	14	\$53.94	4%	100%	\$56.65	2,239.30	2,093.92	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,554.10	13	\$694.04	36%	100%	\$28.47	10,784.20	10,784.20	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	3,240.71	12	\$31.27	3%	100%	\$668.13	32.64	34.98	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	New	19.94	12	\$1.71	100%	100%	\$16.62	1,598.19	1,582.11	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	4.00	20	\$30.05	100%	100%	\$85.29	1,033.88	1,040.88	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	New	22.45	10	\$2.15	100%	100%	\$4.40	1,588.70	1,530.14	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	New	33.88	12	\$7.97	100%	100%	\$35.72	737.72	692.19	USDOE SSL Projections - 2016
Single Family	Appliances	Clothes Dryer	1 units	New	38.07	15	\$252.88	84%	100%	\$661.72	296.86	296.86	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	92%	100%	\$160.46	868.06	868.06	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	New	14.48	15	\$43.80	100%	100%	\$301.34	113.84	113.84	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	New	39.83	21	\$56.02	99%	100%	\$117.60	215.81	215.81	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	New	16.09	15	\$43.80	43%	100%	\$271.21	52.95	52.95	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	New	175.51	19	\$335.85	78%	100%	\$167.82	1,461.23	1,461.23	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	New	7.76	11	\$4.77	99%	100%	\$74.55	126.92	126.92	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	74%	100%	\$68.35	213.55	213.55	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	New	73.81	5	\$8.47	89%	100%	\$25.49	407.91	407.91	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	New	16.85	4	\$58.89	247%	100%	\$939.76	102.69	102.69	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	New	47.87	6	\$0.01	216%	100%	\$0.04	586.28	586.28	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	74%	100%	\$345.65	39.02	39.02	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	249%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	New	118.09	10	\$804.14	0%	100%	\$881.11	33.28	33.28	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	New	2,264.70	15	\$358.09	2%	100%	\$15.75	618.99	618.99	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	New	2,728.58	15	\$1,513.66	0%	100%	\$55.27	60.60	60.60	PLHT-Miscellaneous-AEG-7
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	195.92	10	\$304.56	6%	100%	\$201.14	213.69	213.69	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	67%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	New	183.78	20	\$116.51	29%	100%	\$54.23	749.48	749.48	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	15.03	14	\$133.62	28%	100%	\$1,025.11	24.98	25.22	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	3.44	10	\$0.01	30%	100%	\$0.39	7.70	7.70	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	3%	100%	\$431.34	1.29	1.18	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	Existing	82.33	15	\$7,492.42	1%	100%	\$9,066.28	0.88	0.88	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	12.40	14	\$53.94	3%	100%	\$431.34	0.00	0.02	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,552.78	13	\$694.04	45%	100%	\$28.48	3,242.25	3,242.25	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	3,239.29	12	\$31.27	4%	100%	\$668.42	10.24	11.81	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	Existing	24.27	12	\$1.71	100%	100%	\$14.23	569.95	662.46	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	4.34	20	\$30.05	100%	100%	\$78.70	89.16	89.75	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	Existing	30.80	10	\$2.15	100%	100%	\$3.22	112.41	107.81	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	38.15	12	\$7.97	100%	100%	\$32.05	159.83	164.93	USDOE SSL Projections - 2016
Multifamily	Appliances	Clothes Dryer	1 units	Existing	30.10	15	\$252.88	66%	100%	\$837.13	61.05	61.05	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	80%	100%	\$160.46	252.51	252.51	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	Existing	14.48	15	\$43.80	99%	100%	\$301.34	32.90	32.90	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	Existing	39.83	21	\$56.02	15%	100%	\$117.60	11.22	11.22	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	Existing	16.09	15	\$43.80	4%	100%	\$271.21	1.33	1.33	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	Existing	141.36	19	\$335.85	97%	100%	\$208.36	458.13	458.13	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	97%	100%	\$74.55	45.64	45.64	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	34%	100%	\$68.35	55.85	55.85	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	41%	100%	\$25.49	96.01	96.01	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	228%	100%	\$939.76	51.02	51.02	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	125%	100%	\$0.04	127.65	127.65	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	34%	100%	\$345.65	6.79	6.79	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	160%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	2,264.70	15	\$358.09	0%	100%	\$15.75	31.82	31.82	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$1,513.66	0%	100%	\$0.00	0.00	0.00	PLHT-Miscellaneous-AEG-7
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	195.92	10	\$304.56	0%	100%	\$201.14	5.40	5.40	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	39%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	Existing	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	New	12.08	14	\$133.62	28%	100%	\$1,275.15	21.07	21.20	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	2.80	10	\$0.01	30%	100%	\$0.48	3.26	3.26	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	3%	100%	\$252.10	5.13	4.89	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	New	76.72	15	\$7,492.42	1%	100%	\$9,729.16	0.89	0.89	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	21.33	14	\$53.94	3%	100%	\$252.10	0.00	0.06	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,552.83	13	\$694.04	45%	100%	\$28.48	1,899.42	1,899.42	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	3,239.29	12	\$31.27	4%	100%	\$668.42	5.55	5.96	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	New	24.27	12	\$1.71	100%	100%	\$14.23	369.43	367.39	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	4.34	20	\$30.05	100%	100%	\$78.70	65.73	66.18	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	New	30.80	10	\$2.15	100%	100%	\$3.22	64.10	62.37	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	38.15	12	\$7.97	100%	100%	\$32.05	101.69	96.19	USDOE SSL Projections - 2016
Multifamily	Appliances	Clothes Dryer	1 units	New	30.10	15	\$252.88	66%	100%	\$837.13	39.06	39.06	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	80%	100%	\$160.46	162.80	162.80	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	New	14.48	15	\$43.80	99%	100%	\$301.34	24.24	24.24	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	New	39.83	21	\$56.02	15%	100%	\$117.60	7.12	7.12	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	New	16.09	15	\$43.80	4%	100%	\$271.21	0.97	0.97	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	New	141.36	19	\$335.85	97%	100%	\$208.36	314.50	314.50	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	New	7.76	11	\$4.77	97%	100%	\$74.55	26.81	26.81	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	34%	100%	\$68.35	21.02	21.02	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	New	73.81	5	\$8.47	41%	100%	\$25.49	40.13	40.13	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	New	16.85	4	\$58.89	228%	100%	\$939.76	20.40	20.40	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	New	47.87	6	\$0.01	125%	100%	\$0.04	72.35	72.35	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	34%	100%	\$345.65	3.83	3.83	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	160%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	New	2,264.70	15	\$358.09	0%	100%	\$15.75	21.23	21.23	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$1,513.66	0%	100%	\$0.00	0.00	0.00	PLHT-Miscellaneous-AEG-7
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	195.92	10	\$304.56	0%	100%	\$201.14	3.37	3.37	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	39%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	New	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	32.04	14	\$133.62	13%	100%	\$480.88	23.89	24.12	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	6.08	10	\$0.01	38%	100%	\$0.22	17.35	17.35	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	2%	100%	\$141.85	0.93	0.86	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	Existing	47.78	15	\$7,492.42	17%	100%	\$9,999.00	12.81	12.81	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	39.01	14	\$53.94	2%	100%	\$141.85	0.00	0.05	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,554.07	13	\$694.04	55%	100%	\$28.47	4,039.71	4,039.71	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	3,240.71	12	\$31.27	4%	100%	\$668.13	13.22	15.20	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	Existing	17.08	12	\$1.71	100%	100%	\$17.85	411.59	444.38	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	4.00	20	\$30.05	100%	100%	\$85.29	114.67	115.44	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	Existing	19.27	10	\$2.15	100%	100%	\$5.10	210.00	199.04	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	32.42	12	\$7.97	100%	100%	\$36.63	93.51	94.09	USDOE SSL Projections - 2016
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	47.48	15	\$252.88	89%	100%	\$530.62	89.16	89.16	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	79%	100%	\$160.46	170.17	170.17	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	Existing	14.48	15	\$43.80	100%	100%	\$301.34	22.56	22.56	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	Existing	39.83	21	\$56.02	82%	100%	\$117.60	41.13	41.13	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	16.09	15	\$43.80	22%	100%	\$271.21	5.59	5.59	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	Existing	212.80	19	\$335.85	71%	100%	\$138.41	342.76	342.76	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	98%	100%	\$74.55	31.40	31.40	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	57%	100%	\$68.35	64.21	64.21	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	69%	100%	\$25.49	110.38	110.38	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	203%	100%	\$939.77	30.96	30.96	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	205%	100%	\$0.04	143.75	143.75	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	57%	100%	\$345.66	7.80	7.80	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	215%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	2,264.70	15	\$358.09	1%	100%	\$15.75	105.56	105.56	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	0.00	15	\$1,513.66	0%	100%	\$0.00	0.00	0.00	PLHT-Miscellaneous-AEG-7
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	195.92	10	\$304.56	3%	100%	\$201.14	25.89	25.89	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	62%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	Existing	147.74	20	\$116.51	23%	100%	\$67.46	103.61	103.61	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	26.93	14	\$133.62	13%	100%	\$572.10	26.72	26.89	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	5.53	10	\$0.01	38%	100%	\$0.24	8.18	8.18	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	2%	100%	\$83.84	3.39	3.32	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	New	41.47	15	\$7,492.42	17%	100%	\$9,999.00	15.10	15.10	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	66.17	14	\$53.94	2%	100%	\$83.84	0.00	0.08	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,554.80	13	\$694.04	55%	100%	\$28.46	2,367.24	2,367.24	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	3,240.71	12	\$31.27	4%	100%	\$668.13	7.17	7.68	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	New	17.08	12	\$1.71	100%	100%	\$17.85	236.37	229.29	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	4.00	20	\$30.05	100%	100%	\$85.29	74.79	75.30	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	New	19.27	10	\$2.15	100%	100%	\$5.10	106.81	103.15	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	32.42	12	\$7.97	100%	100%	\$36.63	52.77	49.49	USDOE SSL Projections - 2016
Mobile Home	Appliances	Clothes Dryer	1 units	New	47.48	15	\$252.88	89%	100%	\$530.62	57.04	57.04	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	79%	100%	\$160.46	109.72	109.72	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	New	14.48	15	\$43.80	100%	100%	\$301.34	16.58	16.58	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	New	39.83	21	\$56.02	82%	100%	\$117.60	26.09	26.09	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	New	16.09	15	\$43.80	22%	100%	\$271.20	4.08	4.08	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	New	212.80	19	\$335.85	71%	100%	\$138.41	235.30	235.30	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	New	7.76	11	\$4.77	98%	100%	\$74.55	18.44	18.44	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	57%	100%	\$68.35	24.17	24.17	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	New	73.81	5	\$8.47	69%	100%	\$25.49	46.14	46.14	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	New	16.85	4	\$58.89	203%	100%	\$939.77	12.38	12.38	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	New	47.87	6	\$0.01	205%	100%	\$0.04	81.47	81.47	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	57%	100%	\$345.66	4.40	4.40	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	215%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	New	2,264.70	15	\$358.09	1%	100%	\$15.75	70.42	70.42	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	New	0.00	15	\$1,513.66	0%	100%	\$0.00	0.00	0.00	PLHT-Miscellaneous-AEG-7
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	195.92	10	\$304.56	3%	100%	\$201.14	16.13	16.13	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	62%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	New	147.74	20	\$116.51	23%	100%	\$68.56	70.83	70.83	AEG Estimate
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.11	45	\$1.32	22%	38%	\$53.65	422.14	441.29	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.53	45	\$1.32	22%	38%	\$53.65	2,345.55	2,360.90	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.02	45	\$1.15	22%	0%	\$204.94	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.36	45	\$1.15	22%	0%	\$204.94	0.00	0.00	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	Existing	39.58	15	\$631.36	4%	19%	\$117.58	153.54	160.51	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	Existing	499.32	15	\$631.36	4%	19%	\$117.58	775.32	780.39	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.63	0%	4%	\$76.98	25.75	26.91	INS_WLC-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.40	45	\$1.63	0%	4%	\$76.98	926.82	932.89	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.03	20	\$0.92	2%	2%	\$89.43	0.00	0.00	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.85	20	\$0.92	2%	2%	\$89.43	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.04	50	\$1.37	1%	1%	\$155.30	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.54	50	\$1.37	1%	1%	\$155.30	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.02	45	\$1.55	25%	30%	\$166.68	-11.52	-12.04	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.64	45	\$1.55	25%	30%	\$166.68	165.61	166.69	INS_FLR-Heating-RTF-SFv3.7-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	45	\$1.37	25%	30%	\$998.12	-1.79	-1.87	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.09	45	\$1.37	25%	30%	\$998.12	24.55	24.71	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$93.59	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.67	70	\$0.95	2%	2%	\$93.59	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$93.59	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.67	70	\$0.95	2%	2%	\$93.59	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	Existing	52.99	18	\$528.00	52%	60%	\$73.96	65.92	71.87	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	Existing	601.11	18	\$528.00	52%	60%	\$73.96	222.14	225.88	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$645.73	23%	56%	\$65.75	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Space Heating	Ducting - Repair and Sealing	household	Existing	849.99	20	\$645.73	23%	56%	\$65.75	1,363.44	1,386.44	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.08	10	\$0.55	8%	19%	\$78.22	269.57	290.25	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.85	10	\$0.55	8%	19%	\$78.22	818.04	830.24	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	12%	56%	\$213.79	47.60	49.75	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.36	15	\$0.78	12%	56%	\$213.79	2,964.79	2,984.18	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	15	\$0.66	4%	19%	\$182.39	9.19	9.61	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.36	15	\$0.66	4%	19%	\$182.39	1,031.55	1,038.30	INF_CTRL-Heating-7PLN-SFv7-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.08	15	\$0.67	4%	19%	\$63.14	310.32	319.08	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.98	15	\$0.67	4%	19%	\$63.14	1,549.16	1,555.96	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.24	45	\$21.76	30%	68%	\$217.07	412.79	431.51	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.45	45	\$21.76	30%	68%	\$217.07	4,349.83	4,378.28	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$113.53	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	7.96	20	\$10.51	3%	8%	\$113.53	596.67	600.57	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.71	10	\$3.73	12%	56%	\$707.69	1,420.18	1,484.60	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	Existing	118.18	15	\$1,692.66	4%	19%	\$105.58	457.55	475.04	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	Existing	1,490.80	15	\$1,692.66	4%	19%	\$105.58	2,302.28	2,315.43	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	43%	80%	\$61.22	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	Existing	20.30	45	\$18.64	43%	80%	\$61.22	1,636.10	1,646.80	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	Existing	83.61	30	\$59.05	43%	80%	\$53.49	798.23	819.92	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	43%	80%	\$53.49	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	72.47	15	\$4,269.72	1%	75%	\$202.45	407.48	408.14	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	2,028.96	15	\$4,269.72	1%	75%	\$202.45	8,554.01	8,554.01	DHP-Heating-RTF-SFv4.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	128.82	15	\$4,269.72	1%	45%	\$116.55	839.84	905.17	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,529.93	15	\$4,269.72	1%	45%	\$116.55	4,696.57	4,696.57	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	959.17	20	\$1,348.08	0%	0%	\$120.82	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	3,710.60	15	\$3,379.23	0%	23%	\$90.73	2,553.85	2,553.85	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	Existing	880.35	2	\$80.50	7%	75%	\$46.09	1,708.20	1,708.20	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	833.28	3	\$18.46	0%	50%	\$7.72	3,144.60	3,149.76	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	74.00	6	\$285.43	7%	75%	\$791.53	754.19	795.80	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.64	15	\$601.89	65%	75%	\$97.54	0.10	0.10	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	624.58	15	\$601.89	65%	75%	\$97.54	101.32	102.95	ASHP_MNT-Heating-RTF-SFv3.4-1
Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	347.19	15	\$8,271.00	0%	20%	\$139.76	139.20	144.48	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	3,772.73	15	\$8,271.00	0%	20%	\$139.76	1,677.08	1,690.69	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,968.49	15	\$8,271.00	0%	20%	\$139.76	809.95	826.64	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.99	10	\$48.72	40%	75%	\$596.27	200.22	205.73	FN_WH-Cooling-CPUC-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Whole-House Fan - Installation	household	Existing	46.08	20	\$737.07	15%	0%	\$1,421.65	0.00	0.00	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	Existing	7.55	5	\$254.58	4%	56%	\$128.87	103.38	107.34	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	Existing	433.48	5	\$254.58	4%	56%	\$128.87	2,366.70	2,380.21	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	Existing	39.03	5	\$485.43	1%	19%	\$121.90	178.08	184.89	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	Existing	830.57	5	\$485.43	1%	19%	\$121.90	1,511.57	1,520.20	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	Existing	9.16	5	\$485.43	1%	19%	\$121.90	115.05	140.37	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	Existing	7.07	5	\$485.43	1%	19%	\$121.90	30.72	37.02	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	Existing	9.55	5	\$485.43	1%	19%	\$121.90	163.91	149.52	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	231.20	40	\$864.21	1%	5%	\$270.32	135.42	138.53	DHW_DWHR-Water Heating-7PLN-v3-1
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	111.02	15	\$5.30	34%	0%	\$5.07	0.00	0.00	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.98	10	\$0.01	51%	75%	\$0.02	612.62	650.77	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.18	15	\$3.37	12%	75%	\$14.23	1,222.41	1,298.53	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,557.87	20	\$1,175.39	0%	0%	\$68.90	69.02	71.51	DHW_DSH-Water Heating-RTF-v2.2-7
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	78.96	2	\$5.13	41%	0%	\$34.95	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.95	10	\$16.82	16%	45%	\$44.73	425.67	452.18	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	Existing	1,165.55	20	\$9,127.71	2%	30%	\$715.19	2,443.48	2,494.98	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	Existing	323.90	12	\$72.03	0%	12%	\$33.58	578.25	591.53	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	Existing	-58.41	12	\$72.03	0%	12%	\$33.58	-71.43	-71.67	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	121.75	8	\$102.48	0%	5%	\$204.20	283.12	383.62	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	26.35	15	\$10.55	8%	50%	\$61.99	824.20	1,083.45	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	39.04	3	\$28.71	1%	30%	\$396.70	422.72	555.69	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	19.73	10	\$19.80	2%	50%	\$201.75	712.97	937.24	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	201.24	7	\$222.66	0%	65%	\$299.10	1,996.70	2,245.20	RFG_DEC-Appliances-RTF-v5.1-1
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	10%	\$177.12	980.07	999.97	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.82	5	\$37.31	8%	25%	\$220.30	594.59	582.14	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	74.42	5	\$50.76	8%	25%	\$156.36	1,139.78	1,115.93	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	1%	75%	\$3.08	417.13	424.59	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,392.29	20	\$3,900.44	0%	30%	\$244.71	9.56	9.65	PLHT_SOL-Miscellaneous-AEG-1

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Single Family	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$129.49	291.49	296.70	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	3.96	16	\$179.25	0%	30%	\$6,756.07	146.96	177.09	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	576.52	20	\$15,574.39	0%	0%	\$130.02	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	6,060.79	20	\$15,574.39	0%	0%	\$130.02	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,444.48	20	\$15,574.39	0%	0%	\$130.02	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	552.73	20	\$15,574.39	0%	0%	\$130.02	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	142.21	20	\$15,574.39	0%	0%	\$130.02	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,215.75	20	\$15,574.39	0%	0%	\$130.02	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	367.99	20	\$15,574.39	0%	0%	\$130.02	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	359.55	20	\$15,574.39	0%	0%	\$130.02	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Single Family	Cooling	Behavioral Programs	household	Existing	0.95	5	\$33.89	37%	37%	\$64.16	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	Existing	12.01	5	\$33.89	37%	37%	\$64.16	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	Existing	128.75	5	\$33.89	37%	37%	\$64.16	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	Existing	25.78	5	\$33.89	37%	37%	\$64.16	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$64.16	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$64.16	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$64.16	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$64.16	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.11	45	\$1.32	15%	38%	\$53.34	101.01	102.31	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	New	1.53	45	\$1.32	15%	38%	\$53.34	522.21	524.78	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.02	45	\$1.15	15%	38%	\$203.98	15.60	15.80	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.36	45	\$1.15	15%	38%	\$203.98	122.43	123.03	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	New	37.71	15	\$631.36	1%	5%	\$148.01	6.05	6.14	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	New	388.97	15	\$631.36	1%	5%	\$148.01	23.72	23.84	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.02	45	\$1.63	0%	0%	\$76.75	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.40	45	\$1.63	0%	0%	\$76.75	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.92	1%	15%	\$113.69	27.43	27.78	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.66	20	\$0.92	1%	15%	\$113.69	243.07	244.26	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.04	50	\$1.37	0%	5%	\$195.48	13.13	13.30	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.42	50	\$1.37	0%	5%	\$195.48	51.42	51.67	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.02	45	\$1.55	38%	38%	\$166.50	-0.07	-0.07	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.64	45	\$1.55	38%	38%	\$166.50	0.96	0.96	INS_FLR-Heating-RTF-SFv3.7-7
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	45	\$1.37	38%	38%	\$997.14	-0.01	-0.01	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.09	45	\$1.37	38%	38%	\$997.14	0.14	0.14	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	New	-0.02	70	\$0.95	6%	56%	\$93.50	-20.22	-20.49	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	New	0.67	70	\$0.95	6%	56%	\$93.50	261.07	262.35	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.02	70	\$0.95	2%	19%	\$93.50	-6.74	-6.83	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.67	70	\$0.95	2%	19%	\$93.50	87.02	87.45	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	New	48.55	18	\$528.00	79%	80%	\$63.49	1.05	1.10	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	New	703.96	18	\$528.00	79%	80%	\$63.49	4.21	4.22	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$645.73	46%	56%	\$64.87	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Ducting - Repair and Sealing	household	New	853.35	20	\$645.73	46%	56%	\$64.87	67.99	68.20	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.08	10	\$0.55	15%	19%	\$93.14	14.14	14.70	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.69	10	\$0.55	15%	19%	\$93.14	35.29	35.40	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.00	15	\$0.78	12%	56%	\$213.20	1.16	1.18	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.36	15	\$0.78	12%	56%	\$213.20	67.54	67.88	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	15	\$0.66	4%	19%	\$181.91	1.55	1.57	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.36	15	\$0.66	4%	19%	\$181.91	162.27	163.08	INF_CTRL-Heating-7PLN-SFv7-2
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.07	15	\$0.67	4%	19%	\$79.48	70.95	71.44	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.76	15	\$0.67	4%	19%	\$79.48	273.47	274.36	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.31	45	\$21.76	42%	68%	\$214.24	59.75	60.52	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.45	45	\$21.76	42%	68%	\$214.24	472.38	474.69	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	5%	8%	\$113.25	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	New	7.97	20	\$10.51	5%	8%	\$113.25	64.80	65.11	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.72	10	\$3.73	12%	56%	\$671.72	191.91	194.94	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	New	112.59	15	\$1,692.66	4%	19%	\$132.90	87.88	88.87	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	New	1,161.33	15	\$1,692.66	4%	19%	\$132.90	343.38	344.92	WND_CELLSHD-HVAC-E3T-474-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	36%	80%	\$55.85	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	New	22.23	45	\$18.64	36%	80%	\$55.85	346.38	348.08	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	New	85.33	30	\$59.05	36%	80%	\$50.77	258.15	259.93	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	36%	80%	\$50.77	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	75.63	15	\$4,269.72	1%	38%	\$269.31	39.81	39.81	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,503.87	15	\$4,269.72	1%	38%	\$269.31	605.67	605.67	DHP-Heating-RTF-SFv4.1-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	118.30	15	\$4,031.10	1%	38%	\$111.92	132.06	137.40	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,473.89	15	\$4,031.10	1%	38%	\$111.92	724.73	724.73	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	960.39	20	\$1,348.08	0%	15%	\$120.52	432.03	433.15	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,750.29	15	\$3,379.23	0%	0%	\$122.41	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	New	652.52	2	\$80.50	7%	75%	\$62.19	21.26	21.26	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	869.68	3	\$18.46	0%	50%	\$7.37	219.12	219.12	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	67.95	6	\$285.43	45%	75%	\$828.36	39.90	41.14	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.66	15	\$601.89	25%	75%	\$95.46	0.11	0.11	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	629.40	15	\$601.89	25%	75%	\$95.46	100.05	100.42	ASHP_MNT-Heating-RTF-SFv3.4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	322.65	15	\$8,271.00	5%	20%	\$158.82	60.46	61.54	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	3,095.26	15	\$8,271.00	5%	20%	\$158.82	612.81	613.68	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,831.70	15	\$8,271.00	5%	20%	\$158.82	351.87	353.48	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.21	10	\$48.72	40%	75%	\$565.96	39.62	39.89	FN_WH-Cooling-CPUC-1
Single Family	Cooling	Whole-House Fan - Installation	household	New	47.03	20	\$737.07	15%	40%	\$1,349.38	52.15	52.83	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	New	7.71	5	\$254.58	4%	56%	\$128.45	12.12	12.30	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	New	434.03	5	\$254.58	4%	56%	\$128.45	258.17	259.52	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	New	37.19	5	\$485.43	1%	19%	\$153.59	19.49	19.78	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	New	647.01	5	\$485.43	1%	19%	\$153.59	128.28	128.96	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	New	9.37	5	\$485.43	1%	19%	\$153.59	13.36	15.96	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	New	7.19	5	\$485.43	1%	19%	\$153.59	3.54	4.14	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	New	9.00	5	\$485.43	1%	19%	\$153.59	17.54	15.33	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	238.85	40	\$864.21	1%	10%	\$251.28	98.04	98.48	DHW_DWHR-Water Heating-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	114.70	15	\$5.30	43%	50%	\$4.72	87.53	88.18	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	65%	75%	\$0.01	34.78	35.36	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$13.23	210.74	213.69	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,457.47	20	\$1,175.39	0%	0%	\$70.73	17.90	18.00	DHW_DSH-Water Heating-RTF-v2.2-1
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$32.48	10.74	11.01	DHW_STBK-Water Heating-ILTRM-v4.0-3
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$41.58	58.94	59.91	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	New	1,204.10	20	\$9,127.71	2%	30%	\$664.81	1,286.56	1,292.00	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	New	334.61	12	\$72.03	1%	10%	\$30.72	125.21	125.83	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	New	-58.48	12	\$72.03	1%	10%	\$30.72	-14.12	-14.16	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	121.43	8	\$102.48	0%	5%	\$199.63	31.77	40.68	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.15	15	\$10.55	3%	50%	\$61.31	150.47	177.89	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.06	3	\$28.71	1%	30%	\$523.07	15.44	21.15	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.58	10	\$19.80	0%	50%	\$199.51	95.47	115.99	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.41	7	\$222.66	0%	65%	\$247.80	366.48	366.47	RFG_DEC-Appliances-RTF-v5.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	238.83	6	\$145.11	0%	10%	\$171.35	128.60	128.60	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	34.86	5	\$37.31	8%	25%	\$228.40	74.87	71.11	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	66.82	5	\$50.76	8%	25%	\$162.11	143.51	136.31	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	1%	75%	\$2.99	74.28	74.28	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,336.46	20	\$3,900.44	0%	30%	\$249.64	5.51	5.51	PLHT_SOL-Miscellaneous-AEG-1
Single Family	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$132.09	31.59	31.59	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	3.93	16	\$179.25	0%	30%	\$6,681.17	29.10	32.81	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	New	136.14	45	\$6,198.54	14%	68%	\$367.07	757.14	761.21	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	New	731.48	45	\$6,198.54	14%	68%	\$367.07	4,098.98	4,110.02	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	New	26.85	45	\$6,198.54	14%	68%	\$367.07	146.44	147.29	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	357.31	45	\$6,198.54	14%	68%	\$367.07	1,121.81	1,217.74	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	588.36	20	\$15,574.39	2%	8%	\$126.57	249.85	251.20	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	6,068.50	20	\$15,574.39	2%	8%	\$126.57	2,596.53	2,603.49	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,492.26	20	\$15,574.39	2%	8%	\$126.57	621.38	624.93	RES_ADVNC_ZNE-AII-PGE-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	551.26	20	\$15,574.39	2%	8%	\$126.57	132.15	142.80	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	141.13	20	\$15,574.39	2%	8%	\$126.57	35.00	37.60	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,240.69	20	\$15,574.39	2%	8%	\$126.57	517.66	524.01	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	388.45	20	\$15,574.39	2%	8%	\$126.57	181.69	175.99	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	357.59	20	\$15,574.39	2%	8%	\$126.57	170.34	160.55	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Cooling	Behavioral Programs	household	New	1.15	5	\$33.89	37%	37%	\$60.30	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	New	11.85	5	\$33.89	37%	37%	\$60.30	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	New	133.01	5	\$33.89	37%	37%	\$60.30	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	New	25.71	5	\$33.89	37%	37%	\$60.30	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$60.30	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$60.30	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$60.30	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$60.30	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.07	45	\$0.78	13%	38%	\$53.58	35.03	36.25	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.89	45	\$0.78	13%	38%	\$53.58	490.38	489.99	INS_CLG-Heating-RTF-MFv3.4-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.01	45	\$1.15	13%	38%	\$647.52	5.41	5.60	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.11	45	\$1.15	13%	38%	\$647.52	59.16	59.12	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	Existing	11.95	15	\$313.28	4%	19%	\$361.78	8.46	8.75	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	Existing	74.62	15	\$313.28	4%	19%	\$361.78	55.37	55.32	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.01	45	\$1.63	0%	4%	\$331.69	1.42	1.47	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	0.32	45	\$1.63	0%	4%	\$331.69	66.19	66.14	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.92	11%	11%	\$376.82	0.00	0.00	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.19	20	\$0.92	11%	11%	\$376.82	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.02	50	\$1.37	4%	4%	\$630.28	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.12	50	\$1.37	4%	4%	\$630.28	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	Existing	-0.01	45	\$1.04	7%	30%	\$762.60	-2.75	-2.84	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	Existing	0.10	45	\$1.04	7%	30%	\$762.60	51.21	51.16	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.00	45	\$0.92	7%	30%	\$163.67	-0.43	-0.44	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.37	45	\$0.92	7%	30%	\$163.67	200.43	200.27	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	Existing	-0.01	70	\$0.95	7%	7%	\$636.87	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	Existing	0.10	70	\$0.95	7%	7%	\$636.87	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	-0.01	70	\$0.95	7%	7%	\$636.87	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	0.10	70	\$0.95	7%	7%	\$636.87	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	Existing	7.39	18	\$528.00	2%	60%	\$6,902.13	10.28	11.21	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	Existing	0.00	18	\$528.00	2%	60%	\$6,902.13	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$322.87	23%	56%	\$211.29	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	Existing	129.87	20	\$322.87	23%	56%	\$211.29	65.50	64.80	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.05	10	\$0.55	8%	19%	\$231.42	12.01	12.94	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.26	10	\$0.55	8%	19%	\$231.42	38.61	38.24	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	12%	56%	\$1,242.31	2.62	2.71	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.06	15	\$0.78	12%	56%	\$1,242.31	211.73	211.56	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	15	\$0.66	4%	19%	\$600.15	0.51	0.52	INF_CTRL-Cooling-7PLN-SFv7-6
Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.11	15	\$0.66	4%	19%	\$600.15	73.67	73.61	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.04	15	\$0.67	4%	19%	\$256.26	16.50	16.87	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.22	15	\$0.67	4%	19%	\$256.26	109.23	109.17	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.13	45	\$21.76	24%	68%	\$789.34	26.71	27.63	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	1.70	45	\$21.76	24%	68%	\$789.34	364.83	364.54	WND_HE-Heating-RTF-SFv3.7-1

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Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$427.88	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	2.10	20	\$10.51	3%	8%	\$427.88	50.04	50.00	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.38	10	\$3.73	25%	56%	\$1,315.05	54.87	56.78	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	Existing	35.68	15	\$958.59	8%	19%	\$370.78	17.46	17.97	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	Existing	222.79	15	\$958.59	8%	19%	\$370.78	114.78	114.70	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	74%	80%	\$407.42	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	Existing	3.03	45	\$18.64	74%	80%	\$407.42	20.45	20.43	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	Existing	25.24	30	\$59.05	74%	80%	\$175.50	7.43	7.59	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	74%	80%	\$175.50	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	25.44	15	\$4,269.72	0%	75%	\$1,308.90	40.74	40.81	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	299.64	15	\$4,269.72	0%	75%	\$1,308.90	783.87	783.87	DHP-Heating-RTF-SFv4.1-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	39.12	15	\$4,269.72	0%	45%	\$800.20	38.69	41.71	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	495.11	15	\$4,269.72	0%	45%	\$800.20	271.04	271.04	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	143.34	20	\$1,348.08	0%	0%	\$804.03	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	520.45	15	\$3,379.23	0%	23%	\$646.86	147.15	147.15	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	Existing	123.48	2	\$80.50	1%	75%	\$328.63	105.25	105.25	FURN_MNT-Heating-AEG-2

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Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	292.50	3	\$18.46	0%	50%	\$21.99	313.37	313.92	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	22.47	6	\$285.43	1%	75%	\$2,601.03	37.05	39.12	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.18	15	\$601.89	65%	75%	\$640.71	0.00	0.00	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	94.39	15	\$601.89	65%	75%	\$640.71	2.02	2.04	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	104.80	15	\$4,104.00	0%	20%	\$214.61	10.36	10.77	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	576.45	15	\$4,104.00	0%	20%	\$214.61	65.34	65.00	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,310.82	15	\$4,104.00	0%	20%	\$214.61	132.60	135.48	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	11.03	10	\$48.72	40%	75%	\$588.27	35.31	36.07	FN_WH-Cooling-CPUC-1
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	13.91	20	\$737.07	2%	10%	\$4,664.75	5.64	5.83	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	Existing	2.28	5	\$254.58	4%	38%	\$843.25	3.62	3.72	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	Existing	64.78	5	\$254.58	4%	38%	\$843.25	108.14	108.07	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	Existing	11.78	5	\$485.43	1%	13%	\$745.37	6.23	6.41	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	Existing	124.12	5	\$485.43	1%	13%	\$745.37	69.07	69.02	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

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Multifamily	Interior Lighting	Connected Home Control System	household	Existing	4.67	5	\$485.43	1%	13%	\$745.37	6.07	7.80	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	Existing	3.23	5	\$485.43	1%	13%	\$745.37	1.71	2.04	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	Existing	4.55	5	\$485.43	1%	13%	\$745.37	5.12	5.49	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	153.96	40	\$864.21	1%	5%	\$406.13	20.71	21.19	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	54.37	15	\$5.30	13%	50%	\$10.37	141.47	146.15	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.93	10	\$0.01	19%	75%	\$0.02	241.40	256.55	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.16	15	\$3.37	12%	75%	\$14.25	284.89	302.77	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	1,037.39	20	\$1,175.39	0%	0%	\$103.52	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	78.91	2	\$5.13	41%	75%	\$34.98	97.73	103.87	DHW_STBK-Water Heating-ILTRM-v4.0-3
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.92	10	\$16.82	16%	45%	\$44.78	71.65	76.15	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	776.14	20	\$9,127.71	2%	30%	\$1,074.51	372.52	380.51	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	Existing	215.68	12	\$72.03	0%	28%	\$42.63	207.08	211.88	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	Existing	-8.73	12	\$72.03	0%	28%	\$42.63	-11.72	-11.72	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	122.58	8	\$102.48	0%	10%	\$228.03	46.36	68.19	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

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Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	26.37	15	\$10.55	1%	50%	\$62.22	60.90	79.34	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	39.07	3	\$28.71	1%	30%	\$398.15	26.78	34.89	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	19.74	10	\$19.80	1%	50%	\$202.48	45.89	59.78	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	209.79	7	\$222.66	0%	65%	\$262.19	39.00	40.41	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	10%	\$177.12	28.57	29.15	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	25.58	5	\$37.31	8%	25%	\$334.85	73.23	71.80	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	49.03	5	\$50.76	8%	25%	\$237.66	140.37	137.63	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	0%	75%	\$3.08	12.70	12.93	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,900.44	0%	30%	\$0.00	0.00	0.00	PLHT_SOL-Miscellaneous-AEG-1
Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$129.49	8.85	9.00	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.81	16	\$179.25	0%	30%	\$9,999.00	12.77	15.23	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3

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Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	142.93	20	\$7,727.88	0%	0%	\$208.12	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	828.32	20	\$7,727.88	0%	0%	\$208.12	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	962.89	20	\$7,727.88	0%	0%	\$208.12	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	317.01	20	\$7,727.88	0%	0%	\$208.12	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	73.16	20	\$7,727.88	0%	0%	\$208.12	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	777.85	20	\$7,727.88	0%	0%	\$208.12	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	243.11	20	\$7,727.88	0%	0%	\$208.12	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	116.51	20	\$7,727.88	0%	0%	\$208.12	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Cooling	Behavioral Programs	household	Existing	0.29	5	\$33.89	37%	37%	\$107.06	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	Existing	1.79	5	\$33.89	37%	37%	\$107.06	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	Existing	85.74	5	\$33.89	37%	37%	\$107.06	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	13.15	5	\$33.89	37%	37%	\$107.06	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

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Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$107.06	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$107.06	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$107.06	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$107.06	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.06	45	\$0.78	9%	38%	\$55.36	6.75	6.75	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.89	45	\$0.78	9%	38%	\$55.36	103.17	105.95	INS_CLG-Heating-RTF-MFv3.4-4
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.01	45	\$1.15	9%	38%	\$727.91	1.04	1.04	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.10	45	\$1.15	9%	38%	\$727.91	11.38	11.69	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	New	9.31	15	\$313.28	1%	5%	\$510.33	0.31	0.31	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	New	52.90	15	\$313.28	1%	5%	\$510.33	1.69	1.74	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.01	45	\$1.63	0%	0%	\$372.04	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	0.29	45	\$1.63	0%	0%	\$372.04	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.92	11%	15%	\$537.39	0.38	0.38	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.14	20	\$0.92	11%	15%	\$537.39	4.70	4.82	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.02	50	\$1.37	4%	5%	\$889.08	0.18	0.18	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.09	50	\$1.37	4%	5%	\$889.08	0.99	1.02	INS_WLS_SIDING-HVAC-E3T-287-1

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Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	New	0.00	45	\$1.04	15%	38%	\$853.00	-0.42	-0.42	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	New	0.09	45	\$1.04	15%	38%	\$853.00	7.81	8.02	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.00	45	\$0.92	15%	38%	\$167.72	-0.07	-0.07	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.37	45	\$0.92	15%	38%	\$167.72	33.43	34.33	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	New	0.00	70	\$0.95	33%	56%	\$712.31	-0.49	-0.49	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	New	0.09	70	\$0.95	33%	56%	\$712.31	8.78	9.02	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	0.00	70	\$0.95	43%	19%	\$712.31	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	0.09	70	\$0.95	43%	19%	\$712.31	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	New	5.05	18	\$528.00	14%	80%	\$9,667.88	1.63	1.69	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	New	0.00	18	\$528.00	14%	80%	\$9,667.88	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$322.87	30%	56%	\$175.96	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	New	157.80	20	\$322.87	30%	56%	\$175.96	11.12	11.21	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.04	10	\$0.55	10%	19%	\$242.63	1.53	1.58	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.26	10	\$0.55	10%	19%	\$242.63	5.76	5.80	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.00	15	\$0.78	12%	56%	\$1,044.40	0.06	0.06	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.07	15	\$0.78	12%	56%	\$1,044.40	4.82	4.95	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	15	\$0.66	4%	19%	\$672.81	0.08	0.08	INF_CTRL-Cooling-7PLN-SFv7-6

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Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.10	15	\$0.66	4%	19%	\$672.81	11.59	11.90	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.03	15	\$0.67	4%	19%	\$361.48	3.55	3.55	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.16	15	\$0.67	4%	19%	\$361.48	19.65	20.00	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.14	45	\$21.76	33%	68%	\$872.78	4.14	4.15	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	1.55	45	\$21.76	33%	68%	\$872.78	45.61	46.84	WND_HE-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	4%	8%	\$479.57	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	New	1.91	20	\$10.51	4%	8%	\$479.57	6.26	6.42	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.32	10	\$3.73	40%	56%	\$1,527.33	3.70	3.71	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	New	27.81	15	\$958.59	13%	19%	\$523.02	1.68	1.68	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	New	157.95	15	\$958.59	13%	19%	\$523.02	9.19	9.42	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	80%	80%	\$417.60	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	New	3.02	45	\$18.64	80%	80%	\$417.60	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	New	21.07	30	\$59.05	80%	80%	\$203.83	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	80%	80%	\$203.83	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	20.61	15	\$4,269.72	3%	38%	\$2,214.66	3.25	3.25	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	171.46	15	\$4,269.72	3%	38%	\$2,214.66	45.07	45.07	DHP-Heating-RTF-SFv4.1-1

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Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	28.84	15	\$4,031.10	3%	38%	\$767.65	5.16	5.34	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	495.11	15	\$4,031.10	3%	38%	\$767.65	44.59	44.59	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	130.62	20	\$1,348.08	0%	15%	\$901.16	31.03	31.49	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	520.45	15	\$3,379.23	0%	0%	\$646.86	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	New	123.48	2	\$80.50	1%	75%	\$328.63	2.03	2.03	FURN_MNT-Heating-AEG-2
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	237.01	3	\$18.46	0%	50%	\$27.03	19.29	19.29	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	16.56	6	\$285.43	45%	75%	\$3,382.43	1.68	1.72	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.18	15	\$601.89	25%	75%	\$662.84	0.01	0.01	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	90.50	15	\$601.89	25%	75%	\$662.84	2.76	2.77	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	80.04	15	\$4,104.00	5%	20%	\$222.32	5.01	5.10	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	572.35	15	\$4,104.00	5%	20%	\$222.32	37.38	37.53	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,221.67	15	\$4,104.00	5%	20%	\$222.32	77.96	78.32	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.22	10	\$48.72	40%	75%	\$561.02	7.95	7.95	FN_WH-Cooling-CPUC-1

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Multifamily	Cooling	Whole-House Fan - Installation	household	New	11.61	20	\$737.07	2%	10%	\$5,417.77	0.91	0.91	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	New	1.90	5	\$254.58	4%	38%	\$946.21	0.40	0.40	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	New	59.03	5	\$254.58	4%	38%	\$946.21	11.88	12.22	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	New	9.18	5	\$485.43	1%	13%	\$1,026.66	0.64	0.64	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	New	88.00	5	\$485.43	1%	13%	\$1,026.66	5.90	6.07	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Interior Lighting	Connected Home Control System	household	New	5.38	5	\$485.43	1%	13%	\$1,026.66	0.90	1.08	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	New	3.70	5	\$485.43	1%	13%	\$1,026.66	0.25	0.29	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	New	4.35	5	\$485.43	1%	13%	\$1,026.66	0.62	0.65	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	159.30	40	\$864.21	1%	10%	\$376.67	17.29	17.37	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	56.20	15	\$5.30	9%	50%	\$9.62	47.25	47.59	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	14%	75%	\$0.01	41.54	42.22	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$13.23	55.77	56.54	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	972.08	20	\$1,175.39	0%	0%	\$106.02	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$32.48	2.85	2.91	DHW_STBK-Water Heating-ILTRM-v4.0-3

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Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$41.57	11.27	11.45	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	New	803.09	20	\$9,127.71	2%	30%	\$996.56	226.38	227.33	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	New	223.17	12	\$72.03	1%	10%	\$39.23	22.08	22.19	RCIRCPMP_UPG-AII-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	New	-7.95	12	\$72.03	1%	10%	\$39.23	-1.01	-1.03	RCIRCPMP_UPG-AII-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	122.51	8	\$102.48	2%	10%	\$228.36	4.90	6.51	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.17	15	\$10.55	0%	50%	\$61.74	11.45	13.32	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.08	3	\$28.71	1%	30%	\$526.80	1.11	1.50	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.59	10	\$19.80	0%	50%	\$200.94	6.87	8.19	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.41	7	\$222.66	0%	65%	\$247.80	6.72	6.72	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	238.83	6	\$145.11	0%	10%	\$171.35	4.27	4.27	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	23.01	5	\$37.31	8%	25%	\$346.89	10.56	10.05	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	44.11	5	\$50.76	8%	25%	\$246.21	20.25	19.27	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	0%	75%	\$2.99	2.57	2.57	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,900.44	0%	30%	\$0.00	0.00	0.00	PLHT_SOL-Miscellaneous-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$132.09	1.09	1.09	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	2.02	16	\$179.25	0%	30%	\$9,999.00	3.24	3.59	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	New	2.91	45	\$6,198.54	14%	68%	\$9,781.93	3.51	3.51	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	New	16.51	45	\$6,198.54	14%	68%	\$9,781.93	19.13	19.42	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	19.91	45	\$6,198.54	14%	68%	\$9,781.93	23.21	23.35	ESTARH-Water Heating-RTF-SFWAv3.1-3
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	6.34	45	\$6,198.54	14%	68%	\$9,781.93	3.60	3.93	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	145.30	20	\$7,727.88	2%	8%	\$200.32	13.42	13.41	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	825.37	20	\$7,727.88	2%	8%	\$200.32	73.03	74.13	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	995.28	20	\$7,727.88	2%	8%	\$200.32	88.63	89.13	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	316.83	20	\$7,727.88	2%	8%	\$200.32	13.76	14.90	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	72.62	20	\$7,727.88	2%	8%	\$200.32	3.86	4.11	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	789.26	20	\$7,727.88	2%	8%	\$200.32	70.64	71.41	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	256.40	20	\$7,727.88	2%	8%	\$200.32	25.53	24.76	RES_ADVNC_ZNE-AII-PGE-3

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Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	117.89	20	\$7,727.88	2%	8%	\$200.32	9.01	9.62	RES_ADVNC_ZNE-All-PGE-3
Multifamily	Cooling	Behavioral Programs	household	New	0.28	5	\$33.89	37%	37%	\$99.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	New	1.61	5	\$33.89	37%	37%	\$99.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	New	88.71	5	\$33.89	37%	37%	\$99.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	New	14.78	5	\$33.89	37%	37%	\$99.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$99.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$99.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$99.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$99.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.05	45	\$0.78	10%	38%	\$43.54	74.56	76.41	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.14	45	\$0.78	10%	38%	\$43.54	1,073.32	1,079.67	INS_CLG-Heating-RTF-MFv3.4-4
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.01	25	\$1.03	10%	38%	\$259.52	11.52	11.80	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.30	25	\$1.03	10%	38%	\$259.52	285.25	286.94	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	Existing	27.78	15	\$978.30	4%	19%	\$302.44	15.59	15.98	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	Existing	296.26	15	\$978.30	4%	19%	\$302.44	104.98	105.60	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.63	0%	4%	\$91.80	2.61	2.68	INS_WLC-Cooling-RTF-SFv3.7-1

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Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.17	45	\$1.63	0%	4%	\$91.80	125.49	126.23	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.02	20	\$0.92	11%	11%	\$137.19	0.00	0.00	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.55	20	\$0.92	11%	11%	\$137.19	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.04	50	\$1.37	4%	4%	\$182.94	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.45	50	\$1.37	4%	4%	\$182.94	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.01	45	\$1.04	18%	30%	\$294.38	-2.53	-2.59	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.24	45	\$1.04	18%	30%	\$294.38	48.54	48.82	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$1.37	18%	30%	\$536.32	-0.39	-0.40	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.20	25	\$1.37	18%	30%	\$536.32	39.92	40.16	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$245.63	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.26	70	\$0.95	0%	0%	\$245.63	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$245.63	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.26	70	\$0.95	0%	0%	\$245.63	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	Existing	55.65	18	\$528.00	48%	60%	\$98.78	5.46	5.92	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	Existing	431.36	18	\$528.00	48%	60%	\$98.78	73.07	73.48	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	18	\$442.54	22%	56%	\$46.53	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1

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Mobile Home	Space Heating	Ducting - Repair and Sealing	household	Existing	860.44	18	\$442.54	22%	56%	\$46.53	415.32	417.64	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.10	10	\$0.55	7%	19%	\$94.45	13.43	14.41	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.66	10	\$0.55	7%	19%	\$94.45	148.07	148.80	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	12%	56%	\$326.94	4.83	4.95	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.24	15	\$0.78	12%	56%	\$326.94	441.77	444.38	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	25	\$0.78	4%	19%	\$300.78	0.93	0.96	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.20	25	\$0.78	4%	19%	\$300.78	101.33	101.93	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.08	15	\$0.67	4%	19%	\$74.38	30.49	30.97	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.82	15	\$0.67	4%	19%	\$74.38	204.26	205.10	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.19	45	\$21.76	7%	68%	\$329.92	67.50	69.17	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	4.21	45	\$21.76	7%	68%	\$329.92	948.31	953.93	WND_HE-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.42	1%	8%	\$144.87	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	6.18	20	\$10.42	1%	8%	\$144.87	154.77	155.69	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.55	10	\$3.73	12%	56%	\$900.51	144.23	147.80	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	Existing	82.95	15	\$1,538.71	4%	19%	\$159.32	45.93	46.89	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	Existing	884.54	15	\$1,538.71	4%	19%	\$159.32	308.81	310.43	WND_CELLSHD-HVAC-E3T-474-1

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Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	3%	80%	\$103.09	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	Existing	12.05	45	\$18.64	3%	80%	\$103.09	463.15	465.89	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	Existing	58.69	30	\$59.05	3%	80%	\$74.87	164.04	166.53	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	3%	80%	\$74.87	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	67.47	15	\$4,269.72	0%	75%	\$346.11	94.73	94.90	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,161.79	15	\$4,269.72	0%	75%	\$346.11	843.55	843.55	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	124.77	15	\$4,269.72	0%	45%	\$208.93	39.62	42.70	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	1,919.68	15	\$4,269.72	0%	45%	\$208.93	1,095.80	1,095.80	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	569.10	20	\$1,348.08	0%	0%	\$203.45	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,017.94	15	\$3,379.23	0%	23%	\$166.83	591.42	591.42	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	Existing	478.76	2	\$80.50	7%	75%	\$84.76	391.42	391.42	FURN_MNT-Heating-AEG-2
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	775.81	3	\$18.46	0%	50%	\$8.29	726.20	727.45	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	71.67	6	\$285.43	7%	75%	\$816.11	34.90	36.84	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.60	15	\$601.89	65%	75%	\$155.47	0.01	0.01	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	393.40	15	\$601.89	65%	75%	\$155.47	5.05	5.15	ASHP_MNT-Heating-RTF-SFv3.4-1

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Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	335.67	15	\$6,408.00	0%	20%	\$143.93	36.72	38.08	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	2,290.61	15	\$6,408.00	0%	20%	\$143.93	280.00	280.77	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,966.22	15	\$6,408.00	0%	20%	\$143.93	218.82	223.54	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	11.06	10	\$48.72	40%	75%	\$581.77	28.14	28.58	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	32.35	20	\$737.07	15%	40%	\$1,989.98	30.56	31.32	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	Existing	5.30	5	\$254.58	4%	56%	\$216.28	10.38	10.60	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	Existing	257.20	5	\$254.58	4%	56%	\$216.28	317.45	319.11	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	Existing	27.40	5	\$485.43	1%	19%	\$203.90	17.87	18.25	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	Existing	492.80	5	\$485.43	1%	19%	\$203.90	202.75	203.81	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Interior Lighting	Connected Home Control System	household	Existing	5.18	5	\$485.43	1%	19%	\$203.90	8.58	10.34	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	Existing	2.71	5	\$485.43	1%	19%	\$203.90	1.56	1.85	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	Existing	6.23	5	\$485.43	1%	19%	\$203.90	10.48	11.11	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	230.94	40	\$864.21	1%	5%	\$270.91	25.85	26.45	DHW_DWHR-Water Heating-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	102.33	15	\$5.30	28%	50%	\$5.51	196.37	202.91	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.88	10	\$0.01	42%	75%	\$0.02	118.62	126.12	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.15	15	\$3.37	12%	75%	\$14.26	236.83	251.79	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,556.08	20	\$1,175.39	0%	0%	\$69.05	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	78.87	2	\$5.13	41%	75%	\$35.02	81.24	86.38	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.89	10	\$16.82	16%	45%	\$44.83	59.56	63.33	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	1,164.21	20	\$9,127.71	1%	30%	\$716.75	481.01	491.39	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	Existing	323.53	12	\$72.03	0%	17%	\$30.71	152.72	156.28	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	Existing	-34.66	12	\$72.03	0%	17%	\$30.71	-12.88	-12.92	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	122.19	8	\$102.48	0%	10%	\$200.99	38.47	51.22	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	26.37	15	\$10.55	7%	50%	\$60.94	75.10	96.63	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	39.07	3	\$28.71	1%	30%	\$389.96	37.58	48.35	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	19.74	10	\$19.80	0%	50%	\$198.32	64.99	83.62	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	205.32	7	\$222.66	0%	65%	\$280.92	149.11	161.07	RFG_DEC-Appliances-RTF-v5.1-1

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Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	10%	\$177.12	104.73	106.86	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.84	5	\$37.31	8%	25%	\$220.27	76.05	74.51	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	74.45	5	\$50.76	8%	25%	\$156.34	145.78	142.83	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	0%	75%	\$3.08	42.13	42.89	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	0.00	20	\$3,900.44	0%	30%	\$0.00	0.00	0.00	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$129.49	29.34	29.87	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.52	16	\$179.25	0%	30%	\$9,999.00	7.50	8.88	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	370.24	20	\$12,066.34	0%	0%	\$147.75	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	3,374.77	20	\$12,066.34	0%	0%	\$147.75	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,442.94	20	\$12,066.34	0%	0%	\$147.75	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3

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Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	310.89	20	\$12,066.34	0%	0%	\$147.75	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	54.22	20	\$12,066.34	0%	0%	\$147.75	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,221.83	20	\$12,066.34	0%	0%	\$147.75	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	324.12	20	\$12,066.34	0%	0%	\$147.75	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	217.95	20	\$12,066.34	0%	0%	\$147.75	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	Existing	0.67	5	\$33.89	37%	37%	\$69.91	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	Existing	7.12	5	\$33.89	37%	37%	\$69.91	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	Existing	128.60	5	\$33.89	37%	37%	\$69.91	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	14.57	5	\$33.89	37%	37%	\$69.91	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$69.91	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$69.91	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$69.91	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$69.91	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.05	45	\$0.78	28%	38%	\$42.45	4.16	4.20	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	New	1.17	45	\$0.78	28%	38%	\$42.45	65.12	65.30	INS_CLG-Heating-RTF-MFv3.4-4

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Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.01	25	\$1.03	28%	38%	\$259.12	0.64	0.65	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.30	25	\$1.03	28%	38%	\$259.12	16.87	16.91	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	New	23.99	15	\$978.30	1%	5%	\$406.17	0.61	0.62	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	New	216.53	15	\$978.30	1%	5%	\$406.17	3.40	3.41	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.01	45	\$1.63	0%	0%	\$97.52	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.10	45	\$1.63	0%	0%	\$97.52	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.02	20	\$0.92	11%	15%	\$186.05	0.51	0.51	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.40	20	\$0.92	11%	15%	\$186.05	7.33	7.35	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.04	50	\$1.37	4%	5%	\$245.69	0.36	0.36	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.33	50	\$1.37	4%	5%	\$245.69	1.99	2.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.01	45	\$1.04	33%	38%	\$312.69	-0.16	-0.16	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.23	45	\$1.04	33%	38%	\$312.69	3.00	3.00	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$1.37	33%	38%	\$534.45	-0.02	-0.02	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.20	25	\$1.37	33%	38%	\$534.45	2.63	2.63	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$260.91	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	New	0.24	70	\$0.95	0%	0%	\$260.91	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$260.91	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.24	70	\$0.95	0%	0%	\$260.91	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	New	48.15	18	\$528.00	48%	80%	\$96.09	2.47	2.58	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	New	447.80	18	\$528.00	48%	80%	\$96.09	36.61	36.53	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	0.00	18	\$442.54	22%	56%	\$46.21	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Space Heating	Ducting - Repair and Sealing	household	New	861.84	18	\$442.54	22%	56%	\$46.21	77.07	76.90	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.08	10	\$0.55	7%	19%	\$125.05	2.34	2.43	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.49	10	\$0.55	7%	19%	\$125.05	21.54	21.49	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.00	15	\$0.78	12%	56%	\$325.01	0.12	0.12	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.24	15	\$0.78	12%	56%	\$325.01	7.49	7.51	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	25	\$0.78	4%	19%	\$299.96	0.16	0.16	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.20	25	\$0.78	4%	19%	\$299.96	18.44	18.49	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.07	15	\$0.67	4%	19%	\$99.89	6.93	6.97	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.60	15	\$0.67	4%	19%	\$99.89	38.34	38.41	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.22	25	\$21.76	50%	68%	\$406.26	4.19	4.23	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	3.95	25	\$21.76	50%	68%	\$406.26	47.20	47.33	WND_HE-Heating-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.42	6%	8%	\$144.42	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	New	6.19	20	\$10.42	6%	8%	\$144.42	8.21	8.23	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.51	10	\$3.73	12%	56%	\$958.67	19.43	19.65	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	New	71.62	15	\$1,538.71	4%	19%	\$213.97	8.80	8.88	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	New	646.49	15	\$1,538.71	4%	19%	\$213.97	49.06	49.19	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	1%	80%	\$100.15	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	New	12.37	45	\$18.64	1%	80%	\$100.15	89.26	89.51	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	New	54.28	30	\$59.05	1%	80%	\$79.70	45.81	46.07	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	1%	80%	\$79.70	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	61.05	15	\$4,269.72	0%	38%	\$474.47	9.19	9.19	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	835.48	15	\$4,269.72	0%	38%	\$474.47	66.40	66.40	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	98.46	15	\$4,031.10	0%	38%	\$272.12	6.10	6.34	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	1,380.50	15	\$4,031.10	0%	38%	\$272.12	140.89	140.89	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	534.63	20	\$1,348.08	0%	15%	\$216.12	60.62	60.72	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	1,451.16	15	\$3,379.23	0%	0%	\$231.99	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	New	344.29	2	\$80.50	7%	75%	\$117.86	5.42	5.42	FURN_MNT-Heating-AEG-2

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Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	702.00	3	\$18.46	0%	50%	\$9.13	49.93	49.93	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	56.56	6	\$285.43	45%	75%	\$995.22	1.81	1.87	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.59	15	\$601.89	25%	75%	\$156.17	0.01	0.01	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	384.04	15	\$601.89	25%	75%	\$156.17	5.55	5.57	ASHP_MNT-Heating-RTF-SFv3.4-1
Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	274.60	15	\$6,408.00	5%	20%	\$170.40	15.33	15.61	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,690.37	15	\$6,408.00	5%	20%	\$170.40	100.38	100.26	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,831.79	15	\$6,408.00	5%	20%	\$170.40	104.76	105.25	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.18	10	\$48.72	40%	75%	\$566.65	5.98	6.01	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	29.92	20	\$737.07	15%	40%	\$2,118.52	5.25	5.30	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	New	4.90	5	\$254.58	4%	56%	\$229.76	1.21	1.22	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	New	241.61	5	\$254.58	4%	56%	\$229.76	36.79	36.90	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	New	23.65	5	\$485.43	1%	19%	\$273.68	1.95	1.97	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	New	360.18	5	\$485.43	1%	19%	\$273.68	18.28	18.34	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	Connected Home Control System	household	New	5.27	5	\$485.43	1%	19%	\$273.68	1.12	1.30	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	New	2.74	5	\$485.43	1%	19%	\$273.68	0.20	0.23	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	New	5.84	5	\$485.43	1%	19%	\$273.68	1.27	1.29	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	238.86	40	\$864.21	1%	10%	\$251.25	21.57	21.67	DHW_DWHR-Water Heating-7PLN-v3-1
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	105.84	15	\$5.30	29%	50%	\$5.11	58.12	58.54	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	43%	75%	\$0.01	18.09	18.38	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$13.23	46.41	47.06	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,457.54	20	\$1,175.39	0%	0%	\$70.72	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$32.48	2.37	2.43	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$41.58	9.38	9.53	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	New	1,204.16	20	\$9,127.71	1%	30%	\$664.74	292.29	293.52	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	New	334.63	12	\$72.03	1%	10%	\$28.02	27.55	27.69	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	New	-32.56	12	\$72.03	1%	10%	\$28.02	-1.98	-1.98	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	122.00	8	\$102.48	0%	10%	\$199.23	4.88	6.07	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.17	15	\$10.55	11%	50%	\$60.46	12.47	14.42	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.08	3	\$28.71	1%	30%	\$515.87	1.56	2.07	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.59	10	\$19.80	3%	50%	\$196.76	9.08	10.76	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.41	7	\$222.66	0%	65%	\$247.80	28.39	28.39	RFG_DEC-Appliances-RTF-v5.1-1
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	238.83	6	\$145.11	0%	10%	\$171.35	15.64	15.64	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	34.91	5	\$37.31	8%	25%	\$228.30	10.96	10.42	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	66.92	5	\$50.76	8%	25%	\$162.03	21.02	19.98	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	0%	75%	\$2.99	8.54	8.54	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	0.00	20	\$3,900.44	0%	30%	\$0.00	0.00	0.00	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$132.09	3.62	3.62	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	1.50	16	\$179.25	0%	30%	\$9,999.00	1.68	1.86	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	7.49	45	\$6,198.54	14%	68%	\$3,808.39	6.10	6.12	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	New	67.56	45	\$6,198.54	14%	68%	\$3,808.39	55.44	55.52	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	29.85	45	\$6,198.54	14%	68%	\$3,808.39	23.76	23.90	ESTARH-Water Heating-RTF-SFWAv3.1-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	6.21	45	\$6,198.54	14%	68%	\$3,808.39	2.89	3.09	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	374.25	20	\$12,066.34	2%	8%	\$143.12	23.27	23.37	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	3,378.19	20	\$12,066.34	2%	8%	\$143.12	211.64	211.97	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,492.33	20	\$12,066.34	2%	8%	\$143.12	90.70	91.21	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	310.40	20	\$12,066.34	2%	8%	\$143.12	11.03	11.76	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	53.82	20	\$12,066.34	2%	8%	\$143.12	2.01	2.13	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,241.98	20	\$12,066.34	2%	8%	\$143.12	75.50	76.48	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	341.91	20	\$12,066.34	2%	8%	\$143.12	23.30	22.58	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	216.30	20	\$12,066.34	2%	8%	\$143.12	12.03	12.47	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	New	0.73	5	\$33.89	37%	37%	\$65.61	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	New	6.60	5	\$33.89	37%	37%	\$65.61	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	New	133.02	5	\$33.89	37%	37%	\$65.61	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	New	14.48	5	\$33.89	37%	37%	\$65.61	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$65.61	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$65.61	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$65.61	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$65.61	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

Utah Residential Measures Assumptions

Table I-3 Summary of Residential Measure Assumptions in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	62.30	14	\$133.62	76%	100%	\$206.99	22,332.76	22,555.71	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	159.95	10	\$27.04	4%	100%	\$18.30	5,918.79	5,918.79	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	2%	100%	\$59.87	251.74	234.79	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	Existing	60.08	15	\$7,492.42	13%	100%	\$9,999.00	975.08	975.08	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	76.29	14	\$53.94	2%	100%	\$59.87	0.00	6.37	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,345.72	13	\$694.04	9%	100%	\$25.94	55,433.69	55,433.69	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	2,963.20	12	\$31.27	1%	100%	\$611.49	181.50	208.36	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	Existing	19.02	12	\$1.71	100%	100%	\$14.38	32,345.31	40,770.98	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	4.00	20	\$30.05	100%	100%	\$67.49	13,555.27	13,669.41	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	Existing	21.55	10	\$2.15	100%	100%	\$3.82	34,305.97	32,562.03	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	32.35	12	\$7.97	100%	100%	\$30.74	18,861.85	19,475.88	USDOE SSL Projections - 2016
Single Family	Appliances	Clothes Dryer	1 units	Existing	38.07	15	\$252.88	76%	100%	\$553.76	6,281.72	6,281.72	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	92%	100%	\$134.29	18,401.40	18,401.40	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	Existing	14.54	15	\$43.80	100%	100%	\$251.21	2,101.16	2,101.16	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	Existing	40.10	21	\$56.02	61%	100%	\$97.75	2,867.78	2,867.78	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	Existing	16.15	15	\$43.80	43%	100%	\$226.09	989.06	989.06	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	Existing	175.51	19	\$335.85	69%	100%	\$140.44	27,460.04	27,460.04	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	98%	100%	\$62.39	3,175.83	3,175.83	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	81%	100%	\$57.20	8,305.62	8,305.62	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	97%	100%	\$21.33	14,336.45	14,336.45	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	267%	100%	\$786.45	3,251.15	3,251.15	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	230%	100%	\$0.03	12,585.23	12,585.23	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	81%	100%	\$289.26	933.73	933.73	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	267%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	118.09	10	\$804.14	0%	100%	\$737.36	1,551.90	1,551.90	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	Existing	2,264.70	15	\$358.09	3%	100%	\$13.18	20,570.21	20,570.21	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	Existing	2,728.58	15	\$1,513.66	1%	100%	\$46.25	8,170.71	8,170.71	PLHT-Miscellaneous-AEG-7
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	419.05	10	\$304.56	6%	100%	\$78.70	9,632.01	9,632.01	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	90%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	Existing	183.78	20	\$116.51	5%	100%	\$45.38	2,806.24	2,806.24	AEG Estimate
Single Family	Cooling	Central AC	12 kBtu/hr	New	54.66	14	\$133.62	76%	100%	\$235.92	24,557.03	24,727.79	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	9.00	10	\$0.01	4%	100%	\$20.27	2,782.43	2,770.84	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	2%	100%	\$42.06	897.04	802.23	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	New	54.41	15	\$7,492.42	13%	100%	\$9,999.00	1,128.26	1,128.26	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	108.92	14	\$53.94	2%	100%	\$42.06	0.00	40.53	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,335.38	13	\$694.04	9%	100%	\$26.05	30,039.26	30,039.26	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	2,963.20	12	\$31.27	1%	100%	\$611.49	91.23	97.65	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	New	19.02	12	\$1.71	100%	100%	\$14.38	14,379.33	14,548.59	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	4.00	20	\$30.05	100%	100%	\$67.49	8,282.24	8,356.80	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	New	21.55	10	\$2.15	100%	100%	\$3.82	13,887.02	13,288.09	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	New	32.35	12	\$7.97	100%	100%	\$30.74	8,889.62	8,261.32	USDOE SSL Projections - 2016
Single Family	Appliances	Clothes Dryer	1 units	New	38.07	15	\$252.88	76%	100%	\$553.76	3,793.90	3,793.90	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	92%	100%	\$134.29	10,937.20	10,937.20	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	New	14.54	15	\$43.80	100%	100%	\$251.21	1,436.96	1,436.96	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	New	40.10	21	\$56.02	61%	100%	\$97.75	1,701.62	1,701.62	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	New	16.15	15	\$43.80	43%	100%	\$226.09	671.33	671.33	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	New	175.51	19	\$335.85	69%	100%	\$140.44	18,703.62	18,703.62	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	New	7.76	11	\$4.77	98%	100%	\$62.39	1,772.37	1,772.37	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	81%	100%	\$57.20	2,940.19	2,940.19	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	New	73.81	5	\$8.47	97%	100%	\$21.33	5,631.24	5,631.24	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	New	16.85	4	\$58.89	267%	100%	\$786.45	1,171.63	1,171.63	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	New	47.87	6	\$0.01	230%	100%	\$0.03	6,289.16	6,289.16	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	81%	100%	\$289.26	472.70	472.70	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	267%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	New	118.09	10	\$804.14	0%	100%	\$737.36	821.30	821.30	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	New	2,264.70	15	\$358.09	3%	100%	\$13.18	12,761.80	12,761.80	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	New	2,728.58	15	\$1,513.66	1%	100%	\$46.25	5,133.33	5,133.33	PLHT-Miscellaneous-AEG-7
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	419.05	10	\$304.56	6%	100%	\$78.70	5,581.84	5,581.84	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	90%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	New	183.78	20	\$116.51	5%	100%	\$45.38	1,795.76	1,795.76	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	22.61	14	\$133.62	62%	100%	\$570.24	1,330.01	1,342.99	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	4.06	10	\$0.01	17%	100%	\$0.28	92.62	92.62	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	3%	100%	\$178.88	27.07	25.24	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	Existing	53.27	15	\$7,492.42	9%	100%	\$9,999.00	119.17	119.17	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	25.51	14	\$53.94	3%	100%	\$178.88	0.00	0.67	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,917.74	13	\$694.04	24%	100%	\$20.85	35,296.70	35,296.70	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	3,702.40	12	\$31.27	2%	100%	\$489.41	111.43	128.60	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	Existing	21.83	12	\$1.71	100%	100%	\$12.94	10,486.72	13,051.97	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	4.25	20	\$30.05	100%	100%	\$63.56	2,262.86	2,282.36	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	Existing	23.82	10	\$2.15	100%	100%	\$3.47	1,726.81	1,647.83	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	33.68	12	\$7.97	100%	100%	\$28.97	3,850.52	3,800.42	USDOE SSL Projections - 2016
Multifamily	Appliances	Clothes Dryer	1 units	Existing	30.10	15	\$252.88	68%	100%	\$700.56	1,237.29	1,237.29	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	80%	100%	\$134.29	4,549.58	4,549.58	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	Existing	14.54	15	\$43.80	100%	100%	\$251.21	595.56	595.56	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	Existing	40.10	21	\$56.02	12%	100%	\$97.75	166.13	166.13	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	Existing	16.15	15	\$43.80	7%	100%	\$226.09	45.18	45.18	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	Existing	141.36	19	\$335.85	85%	100%	\$174.36	7,841.56	7,841.56	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	94%	100%	\$62.39	878.45	878.45	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	46%	100%	\$57.20	1,374.51	1,374.51	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	56%	100%	\$21.33	2,363.06	2,363.06	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	190%	100%	\$786.45	663.70	663.70	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	150%	100%	\$0.03	2,346.24	2,346.24	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	46%	100%	\$289.26	150.75	150.75	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	177%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	2,264.70	15	\$358.09	0%	100%	\$13.18	632.26	632.26	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	2,728.58	15	\$1,513.66	0%	100%	\$46.25	1,100.18	1,100.18	PLHT-Miscellaneous-AEG-7
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	419.04	10	\$304.56	1%	100%	\$78.70	350.26	350.26	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	67%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	Existing	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	New	21.26	14	\$133.62	62%	100%	\$606.52	1,418.00	1,427.90	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	3.78	10	\$0.01	17%	100%	\$0.30	48.07	48.07	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	3%	100%	\$123.91	73.18	69.72	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	New	51.56	15	\$7,492.42	9%	100%	\$9,999.00	133.87	133.87	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	36.96	14	\$53.94	3%	100%	\$123.91	0.00	1.45	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,917.80	13	\$694.04	24%	100%	\$20.85	22,035.44	22,035.44	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	3,702.40	12	\$31.27	2%	100%	\$489.41	64.58	69.23	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	New	21.83	12	\$1.71	100%	100%	\$12.94	6,699.36	6,767.08	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	4.25	20	\$30.05	100%	100%	\$63.56	1,777.51	1,793.59	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	New	23.82	10	\$2.15	100%	100%	\$3.47	988.15	955.72	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	33.68	12	\$7.97	100%	100%	\$28.97	2,671.00	2,495.29	USDOE SSL Projections - 2016
Multifamily	Appliances	Clothes Dryer	1 units	New	30.10	15	\$252.88	68%	100%	\$700.56	870.45	870.45	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	80%	100%	\$134.29	3,130.72	3,130.72	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	New	14.54	15	\$43.80	100%	100%	\$251.21	468.41	468.41	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	New	40.10	21	\$56.02	12%	100%	\$97.75	112.95	112.95	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	New	16.15	15	\$43.80	7%	100%	\$226.09	35.17	35.17	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	New	141.36	19	\$335.85	85%	100%	\$174.36	6,116.58	6,116.58	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	New	7.76	11	\$4.77	94%	100%	\$62.39	569.37	569.37	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	46%	100%	\$57.20	551.29	551.29	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	New	73.81	5	\$8.47	56%	100%	\$21.33	1,055.17	1,055.17	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	New	16.85	4	\$58.89	190%	100%	\$786.45	273.06	273.06	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	New	47.87	6	\$0.01	150%	100%	\$0.03	1,340.82	1,340.82	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	46%	100%	\$289.26	88.39	88.39	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	177%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	New	2,264.70	15	\$358.09	0%	100%	\$13.18	448.35	448.35	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	New	2,728.58	15	\$1,513.66	0%	100%	\$46.25	790.46	790.46	PLHT-Miscellaneous-AEG-7
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	419.04	10	\$304.56	1%	100%	\$78.70	233.46	233.46	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	67%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	New	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	45.58	14	\$133.62	37%	100%	\$282.88	251.37	253.90	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	8.05	10	\$0.01	15%	100%	\$22.49	614.30	599.18	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	2%	100%	\$95.34	1.97	1.84	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	Existing	44.37	15	\$7,492.42	39%	100%	\$9,999.00	69.91	69.91	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	48.76	14	\$53.94	2%	100%	\$95.34	0.00	0.17	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	936.73	13	\$694.04	20%	100%	\$31.42	3,228.78	3,228.78	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	2,457.40	12	\$31.27	2%	100%	\$737.35	10.56	12.15	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	Existing	18.94	12	\$1.71	100%	100%	\$14.24	806.12	975.18	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	4.00	20	\$30.05	100%	100%	\$67.49	236.62	238.65	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	Existing	21.19	10	\$2.15	100%	100%	\$3.89	417.04	396.53	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	38.14	12	\$7.97	100%	100%	\$27.77	362.15	392.00	USDOE SSL Projections - 2016
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	43.28	15	\$252.88	79%	100%	\$487.19	230.82	230.82	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	Existing	48.53	15	\$78.17	79%	100%	\$134.29	500.71	500.71	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	Existing	14.54	15	\$43.80	100%	100%	\$251.21	66.49	66.49	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	Existing	40.10	21	\$56.02	59%	100%	\$97.75	87.02	87.02	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	16.15	15	\$43.80	25%	100%	\$226.09	18.19	18.19	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	Existing	123.59	19	\$335.85	40%	100%	\$199.44	359.10	359.10	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	Existing	7.76	11	\$4.77	96%	100%	\$62.39	99.44	99.44	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	Existing	58.33	4	\$14.83	63%	100%	\$57.20	209.80	209.80	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	Existing	73.81	5	\$8.47	76%	100%	\$21.33	360.68	360.68	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	Existing	16.85	4	\$58.89	195%	100%	\$786.45	75.97	75.97	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	Existing	47.87	6	\$0.01	219%	100%	\$0.03	381.28	381.28	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	12.17	6	\$20.51	63%	100%	\$289.27	23.01	23.01	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	225%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	2,264.70	15	\$358.09	1%	100%	\$13.18	342.69	342.69	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	2,728.58	15	\$1,513.66	1%	100%	\$46.25	188.11	188.11	PLHT-Miscellaneous-AEG-7
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	419.05	10	\$304.56	3%	100%	\$78.70	133.61	133.61	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	69%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	Existing	147.74	20	\$116.51	13%	100%	\$56.45	162.15	162.15	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	37.82	14	\$133.62	37%	100%	\$340.98	299.98	302.08	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	7.26	10	\$0.01	15%	100%	\$24.50	304.86	291.75	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	2%	100%	\$54.42	7.77	7.59	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	New	37.63	15	\$7,492.42	39%	100%	\$9,999.00	86.99	86.99	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	85.59	14	\$53.94	2%	100%	\$54.42	0.00	0.30	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	937.29	13	\$694.04	20%	100%	\$31.41	2,016.24	2,016.24	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	2,457.40	12	\$31.27	2%	100%	\$737.35	6.12	6.55	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	New	18.94	12	\$1.71	100%	100%	\$14.24	442.48	442.15	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	4.00	20	\$30.05	100%	100%	\$67.49	164.43	165.92	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	New	21.19	10	\$2.15	100%	100%	\$3.89	207.65	200.12	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	38.14	12	\$7.97	100%	100%	\$27.77	199.89	190.42	USDOE SSL Projections - 2016
Mobile Home	Appliances	Clothes Dryer	1 units	New	43.28	15	\$252.88	79%	100%	\$487.19	162.38	162.38	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	New	48.53	15	\$78.17	79%	100%	\$134.29	344.56	344.56	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	New	14.54	15	\$43.80	100%	100%	\$251.21	52.19	52.19	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	New	40.10	21	\$56.02	59%	100%	\$97.75	59.15	59.15	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	New	16.15	15	\$43.80	25%	100%	\$226.09	14.18	14.18	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	New	123.59	19	\$335.85	40%	100%	\$199.44	280.10	280.10	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	New	7.76	11	\$4.77	96%	100%	\$62.39	64.45	64.45	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	New	58.33	4	\$14.83	63%	100%	\$57.20	84.14	84.14	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	New	73.81	5	\$8.47	76%	100%	\$21.33	161.05	161.05	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	New	16.85	4	\$58.89	195%	100%	\$786.45	31.25	31.25	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	New	47.87	6	\$0.01	219%	100%	\$0.03	217.89	217.89	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	12.17	6	\$20.51	63%	100%	\$289.27	13.49	13.49	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	225%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	New	2,264.70	15	\$358.09	1%	100%	\$13.18	243.01	243.01	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	New	2,728.58	15	\$1,513.66	1%	100%	\$46.25	135.15	135.15	PLHT-Miscellaneous-AEG-7
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	419.05	10	\$304.56	3%	100%	\$78.70	89.05	89.05	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	69%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	New	147.74	20	\$116.51	13%	100%	\$56.27	120.45	120.45	AEG Estimate
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.48	45	\$1.32	22%	38%	\$37.58	31,612.65	34,218.06	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.52	45	\$1.32	22%	38%	\$37.58	10,459.45	10,714.51	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.07	45	\$1.15	22%	0%	\$152.32	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.36	45	\$1.15	22%	0%	\$152.32	0.00	0.00	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	Existing	78.38	15	\$631.36	4%	19%	\$107.37	5,264.02	5,697.87	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	Existing	423.89	15	\$631.36	4%	19%	\$107.37	2,946.48	3,018.33	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.07	45	\$1.63	0%	4%	\$63.25	1,928.09	2,087.00	INS_WLC-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.39	45	\$1.63	0%	4%	\$63.25	4,132.95	4,233.74	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.03	20	\$0.92	2%	2%	\$122.35	0.00	0.00	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.52	20	\$0.92	2%	2%	\$122.35	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.08	50	\$1.37	1%	1%	\$141.81	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.46	50	\$1.37	1%	1%	\$141.81	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.08	45	\$1.55	25%	30%	\$155.87	-862.53	-933.61	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.63	45	\$1.55	25%	30%	\$155.87	738.48	756.49	INS_FLR-Heating-RTF-SFv3.7-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	-0.01	45	\$1.37	25%	30%	\$937.82	-133.72	-144.74	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.09	45	\$1.37	25%	30%	\$937.82	109.49	112.16	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$79.53	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.67	70	\$0.95	2%	2%	\$79.53	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$79.53	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.67	70	\$0.95	2%	2%	\$79.53	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	Existing	82.81	18	\$528.00	52%	60%	\$73.63	2,367.56	2,583.90	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	Existing	473.87	18	\$528.00	52%	60%	\$73.63	1,400.51	1,446.13	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$645.73	23%	56%	\$55.73	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Space Heating	Ducting - Repair and Sealing	household	Existing	847.52	20	\$645.73	23%	56%	\$55.73	10,872.76	11,226.95	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.15	10	\$0.55	8%	19%	\$70.65	11,576.50	12,479.28	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.72	10	\$0.55	8%	19%	\$70.65	5,543.90	5,704.24	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.01	15	\$0.78	12%	56%	\$178.17	3,564.28	3,858.04	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.36	15	\$0.78	12%	56%	\$178.17	13,220.78	13,543.17	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.01	15	\$0.66	4%	19%	\$153.35	688.37	745.11	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.36	15	\$0.66	4%	19%	\$153.35	4,599.97	4,712.14	INF_CTRL-Heating-7PLN-SFv7-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.15	15	\$0.67	4%	19%	\$57.66	10,730.97	11,292.06	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.83	15	\$0.67	4%	19%	\$57.66	5,766.33	5,862.73	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	2.12	45	\$21.76	30%	68%	\$145.57	61,798.47	66,891.70	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.42	45	\$21.76	30%	68%	\$145.57	19,397.03	19,870.03	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$96.53	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	7.93	20	\$10.51	3%	8%	\$96.53	2,660.70	2,725.59	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.70	10	\$3.73	12%	56%	\$613.65	24,354.77	26,362.01	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	Existing	249.58	15	\$1,692.66	4%	19%	\$90.40	16,790.01	17,969.89	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	Existing	1,349.81	15	\$1,692.66	4%	19%	\$90.40	9,263.50	9,462.80	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	43%	80%	\$62.44	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	Existing	16.86	45	\$18.64	43%	80%	\$62.44	6,082.07	6,230.38	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	Existing	82.82	30	\$59.05	43%	80%	\$46.38	13,813.36	14,518.16	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	43%	80%	\$46.38	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	72.47	15	\$4,269.72	1%	75%	\$169.42	933.11	934.64	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	2,028.96	15	\$4,269.72	1%	75%	\$169.42	12,641.28	12,641.28	DHP-Heating-RTF-SFv4.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	129.03	15	\$4,269.72	1%	45%	\$106.44	20,866.21	22,491.29	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,224.08	15	\$4,269.72	1%	45%	\$106.44	41,714.13	41,714.13	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	955.46	20	\$1,348.08	0%	0%	\$102.73	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	3,710.60	15	\$3,379.23	0%	23%	\$75.93	24,811.11	24,811.11	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	Existing	756.35	2	\$80.50	7%	75%	\$44.90	14,297.81	14,297.81	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	1,280.22	3	\$18.46	0%	50%	\$4.20	11,063.43	11,081.57	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	139.46	6	\$285.43	7%	75%	\$350.87	34,706.84	36,653.48	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.64	15	\$601.89	65%	75%	\$84.36	0.48	0.51	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	618.22	15	\$601.89	65%	75%	\$84.36	475.75	494.27	ASHP_MNT-Heating-RTF-SFv3.4-1
Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	652.59	15	\$8,271.00	0%	20%	\$126.91	2,070.33	2,150.45	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	3,203.23	15	\$8,271.00	0%	20%	\$126.91	11,042.56	11,215.73	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,813.93	15	\$8,271.00	0%	20%	\$126.91	5,862.04	5,991.38	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.88	10	\$48.72	40%	75%	\$517.04	3,464.53	3,640.19	FN_WH-Cooling-CPUC-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Whole-House Fan - Installation	household	Existing	45.65	20	\$737.07	15%	0%	\$1,232.74	0.00	0.00	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	Existing	7.48	5	\$254.58	4%	56%	\$109.61	1,779.29	1,904.32	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	Existing	431.80	5	\$254.58	4%	56%	\$109.61	10,476.67	10,702.08	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	Existing	73.00	5	\$485.43	1%	19%	\$103.97	5,787.37	6,194.07	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	Existing	786.16	5	\$485.43	1%	19%	\$103.97	6,358.04	6,494.84	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	Existing	6.88	5	\$485.43	1%	19%	\$103.97	980.93	1,207.71	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	Existing	7.34	5	\$485.43	1%	19%	\$103.97	366.06	445.30	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	Existing	16.67	5	\$485.43	1%	19%	\$103.97	3,597.82	3,294.53	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	230.44	40	\$864.21	1%	5%	\$228.08	380.54	389.85	DHW_DWHR-Water Heating-7PLN-v3-1
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	110.66	15	\$5.30	34%	0%	\$4.28	0.00	0.00	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.68	10	\$0.01	51%	75%	\$0.01	1,722.27	1,837.22	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.09	15	\$3.37	12%	75%	\$12.01	3,436.57	3,665.94	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,552.75	20	\$1,175.39	0%	0%	\$58.14	193.97	201.46	DHW_DSH-Water Heating-RTF-v2.2-7
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	78.70	2	\$5.13	41%	0%	\$29.49	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.78	10	\$16.82	16%	45%	\$37.74	1,196.70	1,276.57	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	Existing	1,161.72	20	\$9,127.71	2%	30%	\$603.43	6,865.89	7,020.68	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	Existing	322.83	12	\$72.03	0%	12%	\$28.28	1,624.96	1,664.73	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	Existing	-58.18	12	\$72.03	0%	12%	\$28.28	-309.10	-313.17	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.14	8	\$102.48	0%	5%	\$186.19	3,011.15	4,137.50	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.56	15	\$10.55	8%	50%	\$56.27	8,821.12	11,730.60	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.39	3	\$28.71	1%	30%	\$360.09	4,524.23	6,016.46	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.39	10	\$19.80	2%	50%	\$183.13	7,630.72	10,147.57	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	201.36	7	\$222.66	0%	65%	\$265.57	23,529.55	26,419.12	RFG_DEC-Appliances-RTF-v5.1-1
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	10%	\$158.69	7,104.11	7,248.34	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.53	5	\$37.31	8%	25%	\$191.02	6,507.70	6,582.84	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	73.86	5	\$50.76	8%	25%	\$135.58	12,474.84	12,618.89	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	1%	75%	\$2.58	8,038.83	8,182.60	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,392.29	20	\$3,900.44	0%	30%	\$204.79	756.50	763.10	PLHT_SOL-Miscellaneous-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$108.36	5,617.56	5,718.03	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	3.69	16	\$179.25	0%	30%	\$6,132.67	1,572.86	1,913.31	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	988.38	20	\$15,574.39	0%	0%	\$121.90	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	4,658.60	20	\$15,574.39	0%	0%	\$121.90	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,316.45	20	\$15,574.39	0%	0%	\$121.90	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	395.21	20	\$15,574.39	0%	0%	\$121.90	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	140.38	20	\$15,574.39	0%	0%	\$121.90	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,089.08	20	\$15,574.39	0%	0%	\$121.90	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	380.00	20	\$15,574.39	0%	0%	\$121.90	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3

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Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	614.92	20	\$15,574.39	0%	0%	\$121.90	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Single Family	Cooling	Behavioral Programs	household	Existing	2.01	5	\$33.89	37%	37%	\$57.23	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	Existing	10.87	5	\$33.89	37%	37%	\$57.23	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	Existing	128.33	5	\$33.89	37%	37%	\$57.23	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	Existing	24.17	5	\$33.89	37%	37%	\$57.23	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$57.23	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$57.23	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$57.23	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$57.23	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.49	45	\$1.32	15%	38%	\$36.69	6,678.14	6,941.85	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	New	1.53	45	\$1.32	15%	38%	\$36.69	2,028.88	2,057.44	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.08	45	\$1.15	15%	38%	\$149.23	1,031.43	1,072.16	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.36	45	\$1.15	15%	38%	\$149.23	475.65	482.34	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	New	65.07	15	\$631.36	1%	5%	\$146.08	158.55	164.95	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	New	300.03	15	\$631.36	1%	5%	\$146.08	71.16	72.18	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.07	45	\$1.63	0%	0%	\$62.37	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.40	45	\$1.63	0%	0%	\$62.37	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.92	1%	15%	\$169.78	368.30	382.84	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.36	20	\$0.92	1%	15%	\$169.78	520.31	527.63	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.07	50	\$1.37	0%	5%	\$192.93	344.13	357.72	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.32	50	\$1.37	0%	5%	\$192.93	154.15	156.32	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.08	45	\$1.55	38%	38%	\$155.14	-4.73	-4.91	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.64	45	\$1.55	38%	38%	\$155.14	3.72	3.77	INS_FLR-Heating-RTF-SFv3.7-7
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	-0.01	45	\$1.37	38%	38%	\$933.72	-0.73	-0.76	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.09	45	\$1.37	38%	38%	\$933.72	0.55	0.56	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	New	-0.02	70	\$0.95	6%	56%	\$78.72	-306.22	-318.31	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	New	0.67	70	\$0.95	6%	56%	\$78.72	1,014.29	1,028.57	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.02	70	\$0.95	2%	19%	\$78.72	-102.07	-106.10	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.67	70	\$0.95	2%	19%	\$78.72	338.10	342.86	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	New	85.47	18	\$528.00	79%	80%	\$65.88	36.55	38.21	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	New	527.45	18	\$528.00	79%	80%	\$65.88	21.86	22.20	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$645.73	46%	56%	\$54.80	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Ducting - Repair and Sealing	household	New	852.70	20	\$645.73	46%	56%	\$54.80	470.54	477.97	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.13	10	\$0.55	15%	19%	\$94.65	465.59	485.81	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.51	10	\$0.55	15%	19%	\$94.65	181.42	184.18	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.01	15	\$0.78	12%	56%	\$175.85	169.26	176.09	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.36	15	\$0.78	12%	56%	\$175.85	577.66	585.94	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.01	15	\$0.66	4%	19%	\$151.44	102.60	106.75	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.36	15	\$0.66	4%	19%	\$151.44	630.86	639.90	INF_CTRL-Heating-7PLN-SFv7-2
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.13	15	\$0.67	4%	19%	\$78.44	1,897.23	1,941.54	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.59	15	\$0.67	4%	19%	\$78.44	805.17	812.60	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	1.35	45	\$21.76	42%	68%	\$156.88	3,950.20	4,106.18	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.45	45	\$21.76	42%	68%	\$156.88	1,835.26	1,861.09	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	5%	8%	\$95.41	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	New	7.97	20	\$10.51	5%	8%	\$95.41	251.74	255.29	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.72	10	\$3.73	12%	56%	\$575.78	2,898.57	3,033.79	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	New	207.19	15	\$1,692.66	4%	19%	\$122.99	2,466.92	2,553.90	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	New	955.39	15	\$1,692.66	4%	19%	\$122.99	1,095.25	1,109.29	WND_CELLSHD-HVAC-E3T-474-1

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Single Family	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	36%	80%	\$80.11	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	New	13.05	45	\$18.64	36%	80%	\$80.11	790.33	801.45	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	New	85.06	30	\$59.05	36%	80%	\$43.52	3,961.76	4,057.17	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	36%	80%	\$43.52	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	64.67	15	\$4,269.72	1%	38%	\$250.92	83.38	83.38	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,354.02	15	\$4,269.72	1%	38%	\$250.92	865.35	865.35	DHP-Heating-RTF-SFv4.1-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	106.19	15	\$4,031.10	1%	38%	\$104.12	3,124.68	3,252.75	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,125.03	15	\$4,031.10	1%	38%	\$104.12	6,785.94	6,785.94	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	960.04	20	\$1,348.08	0%	15%	\$101.53	1,649.16	1,660.91	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,476.26	15	\$3,379.23	0%	0%	\$113.77	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	New	504.75	2	\$80.50	7%	75%	\$67.28	172.55	172.55	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	1,142.41	3	\$18.46	0%	50%	\$4.69	704.18	704.18	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	114.78	6	\$285.43	45%	75%	\$410.07	1,702.18	1,757.43	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.66	15	\$601.89	25%	75%	\$80.08	0.56	0.56	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	629.40	15	\$601.89	25%	75%	\$80.08	525.40	528.85	ASHP_MNT-Heating-RTF-SFv3.4-1

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Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	540.42	15	\$8,271.00	5%	20%	\$155.86	840.13	856.45	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	2,292.45	15	\$8,271.00	5%	20%	\$155.86	3,714.94	3,742.59	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,674.85	15	\$8,271.00	5%	20%	\$155.86	2,680.78	2,692.81	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.18	10	\$48.72	40%	75%	\$485.13	616.89	631.01	FN_WH-Cooling-CPUC-1
Single Family	Cooling	Whole-House Fan - Installation	household	New	46.88	20	\$737.07	15%	40%	\$1,156.66	789.63	820.81	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	New	7.68	5	\$254.58	4%	56%	\$108.24	184.82	192.87	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	New	433.87	5	\$254.58	4%	56%	\$108.24	998.58	1,013.78	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	New	60.60	5	\$485.43	1%	19%	\$141.64	485.89	507.05	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	New	556.44	5	\$485.43	1%	19%	\$141.64	426.89	433.39	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	New	7.51	5	\$485.43	1%	19%	\$141.64	109.15	130.20	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	New	8.01	5	\$485.43	1%	19%	\$141.64	40.53	47.64	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	New	15.84	5	\$485.43	1%	19%	\$141.64	341.12	301.27	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	238.85	40	\$864.21	1%	10%	\$210.33	243.37	244.43	DHW_DWHR-Water Heating-7PLN-v3-1

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Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	114.70	15	\$5.30	43%	50%	\$3.95	216.73	218.27	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	65%	75%	\$0.01	85.57	86.94	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$11.07	518.42	525.45	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,457.47	20	\$1,175.39	0%	0%	\$59.20	44.42	44.66	DHW_DSH-Water Heating-RTF-v2.2-1
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$27.19	26.51	27.15	DHW_STBK-Water Heating-ILTRM-v4.0-3
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$34.80	144.99	147.30	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	New	1,204.10	20	\$9,127.71	2%	30%	\$556.48	3,918.73	3,934.73	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	New	334.61	12	\$72.03	1%	10%	\$25.68	310.93	312.41	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	New	-58.46	12	\$72.03	1%	10%	\$25.68	-53.79	-54.20	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	121.42	8	\$102.48	0%	5%	\$166.65	322.90	412.38	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.15	15	\$10.55	3%	50%	\$50.54	1,541.98	1,829.17	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.05	3	\$28.71	1%	30%	\$431.25	158.79	216.58	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.57	10	\$19.80	0%	50%	\$164.49	978.24	1,192.24	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.41	7	\$222.66	0%	65%	\$220.48	4,596.14	4,596.04	RFG_DEC-Appliances-RTF-v5.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	238.83	6	\$145.11	0%	10%	\$153.52	995.88	995.87	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	34.59	5	\$37.31	8%	25%	\$197.86	714.58	703.42	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	66.31	5	\$50.76	8%	25%	\$140.43	1,369.80	1,348.41	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	1%	75%	\$2.50	1,530.77	1,530.77	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,336.46	20	\$3,900.44	0%	30%	\$208.91	468.15	468.15	PLHT_SOL-Miscellaneous-AEG-1
Single Family	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$110.54	649.27	649.27	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	3.93	16	\$179.25	0%	30%	\$5,508.36	299.01	339.05	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	New	135.70	45	\$6,198.54	14%	68%	\$309.25	9,110.94	9,286.36	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	New	731.21	45	\$6,198.54	14%	68%	\$309.25	50,826.28	51,204.76	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	New	26.85	45	\$6,198.54	14%	68%	\$309.25	1,839.88	1,850.28	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	357.30	45	\$6,198.54	14%	68%	\$309.25	14,129.67	15,349.58	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	1,015.11	20	\$15,574.39	2%	8%	\$117.01	5,200.44	5,300.22	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	4,680.91	20	\$15,574.39	2%	8%	\$117.01	24,827.26	25,011.40	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,364.47	20	\$15,574.39	2%	8%	\$117.01	7,133.89	7,173.28	RES_ADVNC_ZNE-AII-PGE-3

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Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	420.41	20	\$15,574.39	2%	8%	\$117.01	1,268.59	1,371.93	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	149.44	20	\$15,574.39	2%	8%	\$117.01	471.06	508.13	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,109.97	20	\$15,574.39	2%	8%	\$117.01	6,093.29	6,062.09	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	402.22	20	\$15,574.39	2%	8%	\$117.01	2,233.69	2,212.03	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	611.16	20	\$15,574.39	2%	8%	\$117.01	4,208.29	3,795.45	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Cooling	Behavioral Programs	household	New	2.32	5	\$33.89	37%	37%	\$52.88	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	New	10.68	5	\$33.89	37%	37%	\$52.88	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	New	133.01	5	\$33.89	37%	37%	\$52.88	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	New	25.71	5	\$33.89	37%	37%	\$52.88	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$52.88	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$52.88	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$52.88	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$52.88	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.23	45	\$0.78	13%	38%	\$39.21	3,107.11	3,310.31	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.89	45	\$0.78	13%	38%	\$39.21	4,457.81	4,525.55	INS_CLG-Heating-RTF-MFv3.4-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.03	45	\$1.15	13%	38%	\$397.30	479.89	511.27	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.13	45	\$1.15	13%	38%	\$397.30	645.15	654.95	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	Existing	18.48	15	\$313.28	4%	19%	\$281.30	343.42	365.87	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	Existing	76.08	15	\$313.28	4%	19%	\$281.30	514.55	522.37	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.63	0%	4%	\$225.96	125.79	134.01	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	0.38	45	\$1.63	0%	4%	\$225.96	721.75	732.72	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.92	11%	11%	\$435.85	0.00	0.00	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.14	20	\$0.92	11%	11%	\$435.85	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.03	50	\$1.37	4%	4%	\$490.07	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.13	50	\$1.37	4%	4%	\$490.07	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	Existing	-0.02	45	\$1.04	7%	30%	\$601.73	-243.63	-259.56	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	Existing	0.11	45	\$1.04	7%	30%	\$601.73	558.37	566.86	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.00	45	\$0.92	7%	30%	\$139.58	-37.77	-40.24	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.37	45	\$0.92	7%	30%	\$139.58	1,822.05	1,849.74	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	Existing	0.00	70	\$0.95	7%	7%	\$440.93	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	Existing	0.12	70	\$0.95	7%	7%	\$440.93	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	0.00	70	\$0.95	7%	7%	\$440.93	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	0.12	70	\$0.95	7%	7%	\$440.93	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	Existing	10.46	18	\$528.00	2%	60%	\$4,081.62	537.69	587.12	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	Existing	0.00	18	\$528.00	2%	60%	\$4,081.62	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$322.87	23%	56%	\$149.83	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	Existing	155.87	20	\$322.87	23%	56%	\$149.83	1,746.40	1,772.95	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.07	10	\$0.55	8%	19%	\$179.30	669.76	722.48	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.27	10	\$0.55	8%	19%	\$179.30	885.12	897.01	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	12%	56%	\$859.50	232.53	247.73	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.07	15	\$0.78	12%	56%	\$859.50	2,308.79	2,343.88	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	15	\$0.66	4%	19%	\$419.26	44.91	47.85	INF_CTRL-Cooling-7PLN-SFv7-6
Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.13	15	\$0.66	4%	19%	\$419.26	803.31	815.52	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.06	15	\$0.67	4%	19%	\$199.25	684.80	713.47	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.23	15	\$0.67	4%	19%	\$199.25	998.78	1,009.23	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.88	45	\$21.76	24%	68%	\$423.62	4,734.96	5,044.62	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	2.04	45	\$21.76	24%	68%	\$423.62	3,978.32	4,038.77	WND_HE-Heating-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$302.64	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	2.51	20	\$10.51	3%	8%	\$302.64	545.71	554.00	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.29	10	\$3.73	25%	56%	\$1,453.90	1,114.42	1,187.31	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	Existing	58.86	15	\$958.59	8%	19%	\$270.31	762.30	804.83	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	Existing	242.27	15	\$958.59	8%	19%	\$270.31	1,131.27	1,146.45	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	74%	80%	\$345.67	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	Existing	3.03	45	\$18.64	74%	80%	\$345.67	185.91	188.74	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	Existing	19.53	30	\$59.05	74%	80%	\$194.03	154.35	160.61	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	74%	80%	\$194.03	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	19.55	15	\$4,269.72	0%	75%	\$1,003.87	318.93	319.48	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	335.13	15	\$4,269.72	0%	75%	\$1,003.87	3,086.12	3,086.12	DHP-Heating-RTF-SFv4.1-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	31.32	15	\$4,269.72	0%	45%	\$633.66	1,198.21	1,291.69	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	532.53	15	\$4,269.72	0%	45%	\$633.66	7,032.91	7,032.91	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	171.49	20	\$1,348.08	0%	0%	\$568.70	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	612.89	15	\$3,379.23	0%	23%	\$459.68	4,176.28	4,176.28	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	Existing	124.93	2	\$80.50	1%	75%	\$271.83	2,573.59	2,573.59	FURN_MNT-Heating-AEG-2

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Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	345.31	3	\$18.46	0%	50%	\$15.59	3,769.34	3,775.84	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	33.85	6	\$285.43	1%	75%	\$1,442.48	2,125.89	2,246.15	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.15	15	\$601.89	65%	75%	\$375.44	0.05	0.06	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	139.66	15	\$601.89	65%	75%	\$375.44	50.57	52.83	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	158.26	15	\$4,104.00	0%	20%	\$160.09	414.81	431.43	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	589.11	15	\$4,104.00	0%	20%	\$160.09	1,714.17	1,726.75	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,509.90	15	\$4,104.00	0%	20%	\$160.09	4,024.87	4,116.76	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.96	10	\$48.72	40%	75%	\$506.36	942.73	981.13	FN_WH-Cooling-CPUC-1
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	10.76	20	\$737.07	2%	10%	\$5,157.28	114.48	121.96	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	Existing	1.76	5	\$254.58	4%	38%	\$603.62	74.04	78.17	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	Existing	77.50	5	\$254.58	4%	38%	\$603.62	1,172.64	1,188.38	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	Existing	17.22	5	\$485.43	1%	13%	\$543.79	240.83	254.26	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	Existing	141.10	5	\$485.43	1%	13%	\$543.79	711.65	721.20	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Interior Lighting	Connected Home Control System	household	Existing	5.01	5	\$485.43	1%	13%	\$543.79	120.58	152.41	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	Existing	3.95	5	\$485.43	1%	13%	\$543.79	38.14	45.14	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	Existing	4.70	5	\$485.43	1%	13%	\$543.79	129.14	135.08	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	191.82	40	\$864.21	1%	5%	\$274.13	244.08	250.11	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	54.19	15	\$5.30	13%	50%	\$8.75	1,333.69	1,380.79	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.63	10	\$0.01	19%	75%	\$0.01	2,276.45	2,429.65	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.08	15	\$3.37	12%	75%	\$12.02	2,686.58	2,867.37	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	1,292.49	20	\$1,175.39	0%	0%	\$69.88	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	78.66	2	\$5.13	41%	75%	\$29.52	921.62	983.64	DHW_STBK-Water Heating-ILTRM-v4.0-3
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.75	10	\$16.82	16%	45%	\$37.78	675.66	721.13	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	967.01	20	\$9,127.71	2%	30%	\$725.28	4,388.99	4,489.75	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	Existing	268.72	12	\$72.03	0%	28%	\$28.71	2,439.99	2,500.32	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	Existing	-10.44	12	\$72.03	0%	28%	\$28.71	-124.87	-125.90	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.84	8	\$102.48	0%	10%	\$200.07	805.18	1,158.82	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.58	15	\$10.55	1%	50%	\$55.29	1,036.90	1,336.14	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.42	3	\$28.71	1%	30%	\$353.79	455.99	587.59	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.40	10	\$19.80	1%	50%	\$179.93	781.25	1,006.71	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	209.93	7	\$222.66	0%	65%	\$232.76	1,327.35	1,373.32	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	10%	\$158.69	419.48	428.02	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	26.00	5	\$37.31	8%	25%	\$282.29	1,271.64	1,283.11	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	49.83	5	\$50.76	8%	25%	\$200.36	2,437.65	2,459.63	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	0%	75%	\$2.58	252.35	256.87	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,392.29	20	\$3,900.44	0%	30%	\$204.79	102.36	103.27	PLHT_SOL-Miscellaneous-AEG-1
Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$108.36	175.75	178.90	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.99	16	\$179.25	0%	30%	\$9,999.00	255.74	302.71	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3

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Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	245.71	20	\$7,727.88	0%	0%	\$148.96	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,085.47	20	\$7,727.88	0%	0%	\$148.96	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,096.94	20	\$7,727.88	0%	0%	\$148.96	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	323.27	20	\$7,727.88	0%	0%	\$148.96	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	85.00	20	\$7,727.88	0%	0%	\$148.96	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	775.13	20	\$7,727.88	0%	0%	\$148.96	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	256.89	20	\$7,727.88	0%	0%	\$148.96	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	142.30	20	\$7,727.88	0%	0%	\$148.96	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Cooling	Behavioral Programs	household	Existing	0.47	5	\$33.89	37%	37%	\$75.20	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	Existing	1.95	5	\$33.89	37%	37%	\$75.20	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	Existing	106.82	5	\$33.89	37%	37%	\$75.20	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	17.58	5	\$33.89	37%	37%	\$75.20	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

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Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$75.20	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$75.20	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$75.20	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$75.20	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.24	45	\$0.78	9%	38%	\$38.64	685.88	699.13	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.89	45	\$0.78	9%	38%	\$38.64	826.96	851.89	INS_CLG-Heating-RTF-MFv3.4-4
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.04	45	\$1.15	9%	38%	\$317.77	105.93	107.98	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.17	45	\$1.15	9%	38%	\$317.77	155.36	160.05	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	New	16.09	15	\$313.28	1%	5%	\$310.92	12.52	12.76	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	New	69.56	15	\$313.28	1%	5%	\$310.92	17.85	18.40	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.63	0%	0%	\$177.25	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	0.49	45	\$1.63	0%	0%	\$177.25	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.92	11%	15%	\$481.77	7.86	8.01	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.13	20	\$0.92	11%	15%	\$481.77	35.32	36.38	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.03	50	\$1.37	4%	5%	\$541.68	7.34	7.49	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.11	50	\$1.37	4%	5%	\$541.68	10.46	10.78	INS_WLS_SIDING-HVAC-E3T-287-1

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Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	New	-0.02	45	\$1.04	15%	38%	\$458.00	-42.64	-43.46	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	New	0.15	45	\$1.04	15%	38%	\$458.00	106.61	109.82	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.00	45	\$0.92	15%	38%	\$141.23	-6.61	-6.74	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.37	45	\$0.92	15%	38%	\$141.23	267.98	276.05	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	New	0.00	70	\$0.95	33%	56%	\$341.70	-11.38	-11.60	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	New	0.16	70	\$0.95	33%	56%	\$341.70	119.90	123.51	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	0.00	70	\$0.95	43%	19%	\$341.70	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	0.16	70	\$0.95	43%	19%	\$341.70	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	New	8.54	18	\$528.00	14%	80%	\$4,794.80	87.01	90.37	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	New	0.00	18	\$528.00	14%	80%	\$4,794.80	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$322.87	23%	56%	\$106.35	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	New	218.64	20	\$322.87	23%	56%	\$106.35	389.42	392.88	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.06	10	\$0.55	8%	19%	\$182.70	106.92	110.87	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.27	10	\$0.55	8%	19%	\$182.70	149.81	151.11	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.01	15	\$0.78	12%	56%	\$229.08	13.36	13.63	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.28	15	\$0.78	12%	56%	\$229.08	144.93	149.37	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	15	\$0.66	4%	19%	\$327.27	8.10	8.26	INF_CTRL-Cooling-7PLN-SFv7-6

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Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.17	15	\$0.66	4%	19%	\$327.27	158.28	163.13	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.05	15	\$0.67	4%	19%	\$220.23	147.14	148.76	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.21	15	\$0.67	4%	19%	\$220.23	202.19	206.37	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.59	45	\$21.76	33%	68%	\$381.30	421.29	429.42	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	2.64	45	\$21.76	33%	68%	\$381.30	622.48	641.25	WND_HE-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	4%	8%	\$235.66	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	New	3.26	20	\$10.51	4%	8%	\$235.66	85.39	87.96	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.31	10	\$3.73	40%	56%	\$1,298.35	85.89	87.88	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	New	51.24	15	\$958.59	13%	19%	\$298.77	72.66	73.90	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	New	221.49	15	\$958.59	13%	19%	\$298.77	102.90	105.77	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	80%	80%	\$349.42	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	New	3.03	45	\$18.64	80%	80%	\$349.42	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	New	21.03	30	\$59.05	80%	80%	\$173.27	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	80%	80%	\$173.27	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	18.13	15	\$4,269.72	3%	38%	\$1,538.80	30.94	30.94	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	213.21	15	\$4,269.72	3%	38%	\$1,538.80	210.48	210.48	DHP-Heating-RTF-SFv4.1-1

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Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	26.96	15	\$4,031.10	3%	38%	\$601.47	197.10	203.98	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	532.53	15	\$4,031.10	3%	38%	\$601.47	1,230.32	1,230.32	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	222.57	20	\$1,348.08	0%	15%	\$442.83	414.10	421.06	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	612.89	15	\$3,379.23	0%	0%	\$459.68	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	New	124.93	2	\$80.50	1%	75%	\$271.83	52.98	52.98	FURN_MNT-Heating-AEG-2
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	320.24	3	\$18.46	0%	50%	\$16.74	281.91	281.91	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	29.14	6	\$285.43	45%	75%	\$1,607.74	115.53	118.73	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.14	15	\$601.89	25%	75%	\$372.76	0.07	0.07	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	135.04	15	\$601.89	25%	75%	\$372.76	60.67	60.98	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	136.94	15	\$4,104.00	5%	20%	\$164.55	198.83	202.14	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	587.82	15	\$4,104.00	5%	20%	\$164.55	889.99	893.88	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,396.32	15	\$4,104.00	5%	20%	\$164.55	2,068.80	2,078.08	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.20	10	\$48.72	40%	75%	\$476.67	192.35	194.44	FN_WH-Cooling-CPUC-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Cooling	Whole-House Fan - Installation	household	New	11.59	20	\$737.07	2%	10%	\$4,605.50	21.18	21.59	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	New	1.90	5	\$254.58	4%	38%	\$471.32	9.33	9.53	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	New	100.58	5	\$254.58	4%	38%	\$471.32	161.11	166.30	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	New	14.99	5	\$485.43	1%	13%	\$592.28	24.53	25.06	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	New	129.00	5	\$485.43	1%	13%	\$592.28	68.87	71.09	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Interior Lighting	Connected Home Control System	household	New	6.16	5	\$485.43	1%	13%	\$592.28	17.25	20.49	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	New	4.85	5	\$485.43	1%	13%	\$592.28	5.49	6.21	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	New	4.45	5	\$485.43	1%	13%	\$592.28	14.08	14.26	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	199.13	40	\$864.21	1%	10%	\$252.22	182.57	183.36	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	56.20	15	\$5.30	9%	50%	\$8.06	398.25	401.06	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	14%	75%	\$0.01	348.22	353.73	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$11.07	467.45	473.73	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	1,215.10	20	\$1,175.39	0%	0%	\$70.99	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$27.19	23.92	24.49	DHW_STBK-Water Heating-ILTRM-v4.0-3

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Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$34.80	94.45	95.95	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	New	1,003.86	20	\$9,127.71	2%	30%	\$667.31	2,871.72	2,883.37	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	New	278.97	12	\$72.03	1%	10%	\$26.63	233.21	234.31	RCIRCPMP_UPG-AII-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	New	-13.55	12	\$72.03	1%	10%	\$26.63	-13.51	-13.75	RCIRCPMP_UPG-AII-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	122.53	8	\$102.48	2%	10%	\$183.28	82.12	106.17	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.17	15	\$10.55	0%	50%	\$49.92	189.70	216.94	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.08	3	\$28.71	1%	30%	\$425.94	18.46	24.10	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.59	10	\$19.80	0%	50%	\$162.47	113.70	133.05	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.41	7	\$222.66	0%	65%	\$220.48	241.86	241.86	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	238.83	6	\$145.11	0%	10%	\$153.52	66.49	66.49	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	23.36	5	\$37.31	8%	25%	\$292.32	162.28	159.30	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	44.78	5	\$50.76	8%	25%	\$207.47	311.08	305.38	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	0%	75%	\$2.50	54.33	54.33	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,336.46	20	\$3,900.44	0%	30%	\$208.91	72.34	72.34	PLHT_SOL-Miscellaneous-AEG-1

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Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$110.54	22.97	22.97	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	2.38	16	\$179.25	0%	30%	\$8,993.21	63.24	69.33	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	New	5.02	45	\$6,198.54	14%	68%	\$6,565.33	113.33	114.32	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	New	21.70	45	\$6,198.54	14%	68%	\$6,565.33	480.94	489.10	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	22.75	45	\$6,198.54	14%	68%	\$6,565.33	508.79	511.65	ESTARH-Water Heating-RTF-SFWAv3.1-3
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	6.90	45	\$6,198.54	14%	68%	\$6,565.33	79.63	86.22	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	251.04	20	\$7,727.88	2%	8%	\$142.04	432.39	436.16	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,085.18	20	\$7,727.88	2%	8%	\$142.04	1,834.97	1,865.98	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,137.56	20	\$7,727.88	2%	8%	\$142.04	1,941.24	1,951.90	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	344.92	20	\$7,727.88	2%	8%	\$142.04	303.83	326.92	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	90.51	20	\$7,727.88	2%	8%	\$142.04	96.70	102.28	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	784.47	20	\$7,727.88	2%	8%	\$142.04	1,421.25	1,407.61	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	271.63	20	\$7,727.88	2%	8%	\$142.04	494.44	488.80	RES_ADVNC_ZNE-AII-PGE-3

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Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	141.40	20	\$7,727.88	2%	8%	\$142.04	258.77	253.20	RES_ADVNC_ZNE-All-PGE-3
Multifamily	Cooling	Behavioral Programs	household	New	0.57	5	\$33.89	37%	37%	\$68.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	New	2.47	5	\$33.89	37%	37%	\$68.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	New	110.89	5	\$33.89	37%	37%	\$68.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	New	21.09	5	\$33.89	37%	37%	\$68.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$68.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$68.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$68.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$68.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.16	45	\$0.78	10%	38%	\$40.36	904.62	960.15	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	0.93	45	\$0.78	10%	38%	\$40.36	929.96	943.98	INS_CLG-Heating-RTF-MFv3.4-4
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.02	25	\$1.03	10%	38%	\$208.50	139.72	148.29	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.30	25	\$1.03	10%	38%	\$208.50	302.67	307.24	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	Existing	40.29	15	\$978.30	4%	19%	\$288.87	86.61	91.92	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	Existing	246.66	15	\$978.30	4%	19%	\$288.87	92.98	94.39	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.05	45	\$1.63	0%	4%	\$77.04	31.72	33.67	INS_WLC-Cooling-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.14	45	\$1.63	0%	4%	\$77.04	130.42	132.39	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.02	20	\$0.92	11%	11%	\$149.48	0.00	0.00	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.42	20	\$0.92	11%	11%	\$149.48	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.06	50	\$1.37	4%	4%	\$174.73	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.38	50	\$1.37	4%	4%	\$174.73	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.03	45	\$1.04	18%	30%	\$273.89	-30.72	-32.60	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.24	45	\$1.04	18%	30%	\$273.89	50.44	51.21	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$1.37	18%	30%	\$459.10	-4.76	-5.05	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.20	25	\$1.37	18%	30%	\$459.10	42.36	43.00	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$209.89	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.25	70	\$0.95	0%	0%	\$209.89	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$209.89	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.25	70	\$0.95	0%	0%	\$209.89	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	Existing	84.07	18	\$528.00	48%	60%	\$89.14	59.95	65.45	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	Existing	373.95	18	\$528.00	48%	60%	\$89.14	79.15	80.87	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	18	\$442.54	22%	56%	\$39.53	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1

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Mobile Home	Space Heating	Ducting - Repair and Sealing	household	Existing	857.12	18	\$442.54	22%	56%	\$39.53	516.94	528.18	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.14	10	\$0.55	7%	19%	\$89.03	138.13	148.95	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.54	10	\$0.55	7%	19%	\$89.03	152.37	155.30	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.01	15	\$0.78	12%	56%	\$272.36	58.64	62.24	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.24	15	\$0.78	12%	56%	\$272.36	468.75	475.82	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	25	\$0.78	4%	19%	\$251.11	11.33	12.02	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.20	25	\$0.78	4%	19%	\$251.11	107.52	109.14	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.11	15	\$0.67	4%	19%	\$71.04	173.11	179.94	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.68	15	\$0.67	4%	19%	\$71.04	181.42	183.27	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	1.20	45	\$21.76	7%	68%	\$232.03	1,637.16	1,737.67	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	4.11	45	\$21.76	7%	68%	\$232.03	985.61	1,000.48	WND_HE-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.42	1%	8%	\$122.40	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	6.16	20	\$10.42	1%	8%	\$122.40	164.22	166.70	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.40	10	\$3.73	12%	56%	\$1,067.66	400.70	425.30	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	Existing	128.30	15	\$1,538.71	4%	19%	\$142.68	274.33	288.72	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	Existing	785.44	15	\$1,538.71	4%	19%	\$142.68	291.99	295.84	WND_CELLSHD-HVAC-E3T-474-1

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Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	3%	80%	\$106.67	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	Existing	9.81	45	\$18.64	3%	80%	\$106.67	401.28	407.34	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	Existing	42.57	30	\$59.05	3%	80%	\$88.76	466.06	483.92	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	3%	80%	\$88.76	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	58.11	15	\$4,269.72	0%	75%	\$296.28	92.79	92.95	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,143.58	15	\$4,269.72	0%	75%	\$296.28	652.94	652.94	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	94.46	15	\$4,269.72	0%	45%	\$196.24	242.56	261.35	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	1,725.87	15	\$4,269.72	0%	45%	\$196.24	1,129.34	1,129.34	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	555.97	20	\$1,348.08	0%	0%	\$175.49	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	1,986.30	15	\$3,379.23	0%	23%	\$141.84	666.71	666.71	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	Existing	404.88	2	\$80.50	7%	75%	\$83.88	380.15	380.15	FURN_MNT-Heating-AEG-2
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	1,026.61	3	\$18.46	0%	50%	\$5.24	1,092.87	1,094.75	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	102.10	6	\$285.43	7%	75%	\$478.63	395.86	418.11	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.45	15	\$601.89	65%	75%	\$110.89	0.01	0.01	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	467.72	15	\$601.89	65%	75%	\$110.89	15.01	15.51	ASHP_MNT-Heating-RTF-SFv3.4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	477.24	15	\$6,408.00	0%	20%	\$144.50	67.99	70.69	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,881.36	15	\$6,408.00	0%	20%	\$144.50	295.16	298.22	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,502.59	15	\$6,408.00	0%	20%	\$144.50	217.68	222.65	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.95	10	\$48.72	40%	75%	\$505.49	109.23	113.42	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	23.47	20	\$737.07	15%	40%	\$2,359.36	84.91	90.13	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	Existing	3.85	5	\$254.58	4%	56%	\$187.58	29.07	30.60	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	Existing	251.26	5	\$254.58	4%	56%	\$187.58	330.23	334.59	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	Existing	37.53	5	\$485.43	1%	19%	\$181.27	94.56	99.52	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	Existing	457.45	5	\$485.43	1%	19%	\$181.27	200.41	203.05	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Interior Lighting	Connected Home Control System	household	Existing	3.82	5	\$485.43	1%	19%	\$181.27	17.19	21.20	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	Existing	4.12	5	\$485.43	1%	19%	\$181.27	6.28	7.73	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	Existing	5.01	5	\$485.43	1%	19%	\$181.27	24.20	26.87	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	190.89	40	\$864.21	1%	5%	\$275.62	22.36	22.91	DHW_DWHR-Water Heating-7PLN-v3-1

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Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	102.00	15	\$5.30	28%	50%	\$4.65	204.87	212.14	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.58	10	\$0.01	42%	75%	\$0.01	123.79	132.17	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.06	15	\$3.37	12%	75%	\$12.03	247.15	263.88	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,286.24	20	\$1,175.39	0%	0%	\$70.26	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	78.61	2	\$5.13	41%	75%	\$29.55	84.78	90.52	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.72	10	\$16.82	16%	45%	\$37.82	62.16	66.37	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	962.32	20	\$9,127.71	1%	30%	\$729.22	416.08	425.68	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	Existing	267.42	12	\$72.03	0%	17%	\$31.98	132.12	135.40	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	Existing	-33.86	12	\$72.03	0%	17%	\$31.98	-13.44	-13.54	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.55	8	\$102.48	0%	10%	\$189.91	97.96	135.57	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.57	15	\$10.55	7%	50%	\$58.92	185.02	251.49	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.40	3	\$28.71	1%	30%	\$377.06	92.57	125.83	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.39	10	\$19.80	0%	50%	\$191.76	160.11	217.64	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	205.45	7	\$222.66	0%	65%	\$249.40	484.38	522.48	RFG_DEC-Appliances-RTF-v5.1-1

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Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	10%	\$158.69	219.72	224.20	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.57	5	\$37.31	8%	25%	\$190.67	209.42	211.82	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	73.93	5	\$50.76	8%	25%	\$135.33	401.45	406.05	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	0%	75%	\$2.58	136.77	139.23	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,392.29	20	\$3,900.44	0%	30%	\$204.79	17.50	17.66	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$108.36	95.26	96.97	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	2.07	16	\$179.25	0%	30%	\$9,999.00	27.09	33.32	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	499.66	20	\$12,066.34	0%	0%	\$146.99	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	2,805.68	20	\$12,066.34	0%	0%	\$146.99	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,090.58	20	\$12,066.34	0%	0%	\$146.99	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3

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Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	218.16	20	\$12,066.34	0%	0%	\$146.99	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	78.44	20	\$12,066.34	0%	0%	\$146.99	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	986.27	20	\$12,066.34	0%	0%	\$146.99	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	328.78	20	\$12,066.34	0%	0%	\$146.99	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	167.47	20	\$12,066.34	0%	0%	\$146.99	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	Existing	1.03	5	\$33.89	37%	37%	\$73.64	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	Existing	6.33	5	\$33.89	37%	37%	\$73.64	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	Existing	106.30	5	\$33.89	37%	37%	\$73.64	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	13.41	5	\$33.89	37%	37%	\$73.64	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$73.64	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$73.64	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$73.64	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$73.64	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.16	45	\$0.78	28%	38%	\$48.18	49.76	51.16	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	New	0.74	45	\$0.78	28%	38%	\$48.18	39.03	39.26	INS_CLG-Heating-RTF-MFv3.4-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.02	25	\$1.03	28%	38%	\$206.00	7.69	7.90	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.30	25	\$1.03	28%	38%	\$206.00	15.93	16.03	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	New	32.68	15	\$978.30	1%	5%	\$385.11	2.89	2.97	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	New	180.50	15	\$978.30	1%	5%	\$385.11	2.68	2.70	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.05	45	\$1.63	0%	0%	\$73.70	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.18	45	\$1.63	0%	0%	\$73.70	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.02	20	\$0.92	11%	15%	\$201.70	1.67	1.72	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.31	20	\$0.92	11%	15%	\$201.70	5.31	5.34	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.05	50	\$1.37	4%	5%	\$232.95	1.69	1.74	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.28	50	\$1.37	4%	5%	\$232.95	1.57	1.58	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.03	45	\$1.04	33%	38%	\$261.48	-1.88	-1.93	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.25	45	\$1.04	33%	38%	\$261.48	3.06	3.08	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$1.37	33%	38%	\$454.49	-0.29	-0.30	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.20	25	\$1.37	33%	38%	\$454.49	2.48	2.50	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$200.61	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	New	0.26	70	\$0.95	0%	0%	\$200.61	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$200.61	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.26	70	\$0.95	0%	0%	\$200.61	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	New	70.31	18	\$528.00	48%	80%	\$89.12	23.05	24.08	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	New	379.55	18	\$528.00	48%	80%	\$89.12	34.69	34.80	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	0.00	18	\$442.54	22%	56%	\$38.82	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Space Heating	Ducting - Repair and Sealing	household	New	861.75	18	\$442.54	22%	56%	\$38.82	86.15	86.44	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.11	10	\$0.55	7%	19%	\$116.25	20.43	21.30	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.40	10	\$0.55	7%	19%	\$116.25	20.01	20.08	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.02	15	\$0.78	12%	56%	\$256.69	3.08	3.17	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.24	15	\$0.78	12%	56%	\$256.69	7.07	7.11	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	25	\$0.78	4%	19%	\$248.39	1.92	1.97	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.20	25	\$0.78	4%	19%	\$248.39	17.42	17.52	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.09	15	\$0.67	4%	19%	\$94.71	34.06	34.64	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.50	15	\$0.67	4%	19%	\$94.71	30.57	30.69	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.75	25	\$21.76	50%	68%	\$283.85	50.11	51.53	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	4.27	25	\$21.76	50%	68%	\$283.85	48.17	48.46	WND_HE-Heating-RTF-SFv3.7-1

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Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.42	6%	8%	\$121.12	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	New	6.19	20	\$10.42	6%	8%	\$121.12	7.76	7.80	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.40	10	\$3.73	12%	56%	\$1,033.81	52.91	54.67	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	New	104.06	15	\$1,538.71	4%	19%	\$190.22	44.81	45.94	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	New	574.76	15	\$1,538.71	4%	19%	\$190.22	41.31	41.53	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	1%	80%	\$132.39	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	New	7.85	45	\$18.64	1%	80%	\$132.39	53.50	53.82	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	New	42.72	30	\$59.05	1%	80%	\$85.95	128.47	130.71	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	1%	80%	\$85.95	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	52.16	15	\$4,269.72	0%	38%	\$416.11	9.49	9.49	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	803.33	15	\$4,269.72	0%	38%	\$416.11	53.56	53.56	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	73.47	15	\$4,031.10	0%	38%	\$261.84	38.83	40.42	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	1,212.37	15	\$4,031.10	0%	38%	\$261.84	150.81	150.81	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	577.56	20	\$1,348.08	0%	15%	\$167.79	62.59	62.78	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	1,395.32	15	\$3,379.23	0%	0%	\$201.91	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	New	284.42	2	\$80.50	7%	75%	\$119.40	5.50	5.50	FURN_MNT-Heating-AEG-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	921.50	3	\$18.46	0%	50%	\$5.82	79.12	79.12	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	79.41	6	\$285.43	45%	75%	\$592.69	20.82	21.50	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.44	15	\$601.89	25%	75%	\$109.49	0.02	0.02	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	459.21	15	\$601.89	25%	75%	\$109.49	17.99	18.05	ASHP_MNT-Heating-RTF-SFv3.4-1
Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	376.55	15	\$6,408.00	5%	20%	\$171.59	29.97	30.54	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,397.24	15	\$6,408.00	5%	20%	\$171.59	117.84	118.00	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,388.94	15	\$6,408.00	5%	20%	\$171.59	113.66	114.17	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.17	10	\$48.72	40%	75%	\$481.34	21.90	22.27	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	23.55	20	\$737.07	15%	40%	\$2,284.58	14.37	14.78	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	New	3.86	5	\$254.58	4%	56%	\$179.37	3.35	3.46	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	New	261.02	5	\$254.58	4%	56%	\$179.37	37.70	37.94	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	New	30.44	5	\$485.43	1%	19%	\$241.86	8.81	9.09	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	New	334.76	5	\$485.43	1%	19%	\$241.86	16.12	16.22	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	Connected Home Control System	household	New	4.15	5	\$485.43	1%	19%	\$241.86	2.19	2.57	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	New	4.47	5	\$485.43	1%	19%	\$241.86	0.80	0.94	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	New	4.65	5	\$485.43	1%	19%	\$241.86	2.60	2.75	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	198.08	40	\$864.21	1%	10%	\$253.62	16.72	16.80	DHW_DWHR-Water Heating-7PLN-v3-1
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	105.83	15	\$5.30	29%	50%	\$4.28	54.20	54.59	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.01	10	\$0.01	43%	75%	\$0.01	16.78	17.04	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$11.07	43.04	43.63	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,208.67	20	\$1,175.39	0%	0%	\$71.39	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	81.56	2	\$5.13	51%	75%	\$27.19	2.20	2.26	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.66	10	\$16.82	16%	45%	\$34.81	8.70	8.84	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	New	998.55	20	\$9,127.71	1%	30%	\$671.02	272.18	273.29	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	New	277.49	12	\$72.03	1%	10%	\$29.26	21.36	21.46	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	New	-35.17	12	\$72.03	1%	10%	\$29.26	-2.04	-2.05	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	122.00	8	\$102.48	0%	10%	\$172.14	12.09	15.28	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.16	15	\$10.55	11%	50%	\$53.04	30.03	35.68	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.06	3	\$28.71	1%	30%	\$452.54	3.76	5.23	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.58	10	\$19.80	3%	50%	\$172.61	21.87	26.74	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.41	7	\$222.66	0%	65%	\$220.48	97.50	97.50	RFG_DEC-Appliances-RTF-v5.1-1
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	238.83	6	\$145.11	0%	10%	\$153.51	34.83	34.83	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	34.68	5	\$37.31	8%	25%	\$197.40	26.73	26.31	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	66.48	5	\$50.76	8%	25%	\$140.10	51.23	50.44	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	0%	75%	\$2.50	29.45	29.45	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,336.46	20	\$3,900.44	0%	30%	\$208.91	12.37	12.37	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$110.54	12.45	12.45	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	2.19	16	\$179.25	0%	30%	\$9,999.00	5.95	6.72	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	10.20	45	\$6,198.54	14%	68%	\$3,779.69	25.30	25.65	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	New	56.32	45	\$6,198.54	14%	68%	\$3,779.69	144.08	144.53	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	22.63	45	\$6,198.54	14%	68%	\$3,779.69	56.40	56.72	ESTARH-Water Heating-RTF-SFWAv3.1-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	4.65	45	\$6,198.54	14%	68%	\$3,779.69	6.48	6.99	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	509.84	20	\$12,066.34	2%	8%	\$141.04	96.52	97.86	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	2,816.04	20	\$12,066.34	2%	8%	\$141.04	549.71	551.43	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,131.55	20	\$12,066.34	2%	8%	\$141.04	215.21	216.40	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	232.34	20	\$12,066.34	2%	8%	\$141.04	24.74	26.52	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	83.51	20	\$12,066.34	2%	8%	\$141.04	9.09	9.79	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,001.20	20	\$12,066.34	2%	8%	\$141.04	200.77	199.37	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	347.66	20	\$12,066.34	2%	8%	\$141.04	70.21	69.54	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	163.32	20	\$12,066.34	2%	8%	\$141.04	30.63	30.70	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	New	1.16	5	\$33.89	37%	37%	\$67.90	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	New	6.42	5	\$33.89	37%	37%	\$67.90	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	New	110.30	5	\$33.89	37%	37%	\$67.90	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	New	14.21	5	\$33.89	37%	37%	\$67.90	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$67.90	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$67.90	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$67.90	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$67.90	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

Washington Residential Measures Assumptions

Table I-4 Summary of Residential Measure Assumptions in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	39.47	14	\$133.62	39%	100%	\$481.08	857.84	867.17	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	5.25	10	\$0.01	22%	100%	\$0.30	129.66	129.66	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	30%	100%	\$58.37	752.62	702.50	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	Existing	79.11	15	\$7,492.42	1%	100%	\$9,999.00	12.66	12.66	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	98.04	14	\$53.94	30%	100%	\$58.37	0.00	20.75	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,700.09	13	\$694.04	62%	100%	\$32.90	61,142.35	61,142.35	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	2,917.55	12	\$679.49	5%	100%	\$178.78	199.16	234.98	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	Existing	21.53	12	\$1.71	100%	100%	(\$20.21)	6,477.53	7,916.89	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	4.69	20	\$30.05	100%	100%	\$31.62	3,505.01	3,534.52	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	Existing	25.43	10	\$2.15	100%	100%	(\$73.14)	6,862.20	6,504.73	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	34.28	12	\$7.97	100%	100%	(\$8.54)	2,489.56	2,520.31	USDOE SSL Projections - 2016
Single Family	Appliances	Clothes Dryer	1 units	Existing	41.76	15	\$252.88	92%	100%	\$547.04	1,028.90	1,028.90	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Dishwasher	1 units	Existing	53.22	15	\$78.17	92%	100%	(\$31.04)	2,618.78	2,618.78	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	Existing	15.91	15	\$43.80	100%	100%	\$340.62	255.30	255.30	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	Existing	46.10	21	\$56.02	72%	100%	\$137.63	476.85	476.85	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	Existing	17.68	15	\$43.80	44%	100%	\$306.56	136.86	136.86	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	Existing	192.48	19	\$335.85	89%	100%	\$195.12	5,463.65	5,463.65	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	Existing	8.51	11	\$4.77	98%	100%	\$81.50	453.12	453.12	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	Existing	63.97	4	\$14.83	64%	100%	\$65.14	930.74	930.74	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	Existing	80.95	5	\$8.47	77%	100%	\$24.83	1,606.57	1,606.57	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	Existing	18.48	4	\$58.89	219%	100%	\$895.59	437.03	437.03	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	Existing	52.50	6	\$0.01	208%	100%	\$0.04	1,937.65	1,937.65	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	13.34	6	\$20.51	64%	100%	\$261.89	115.96	115.96	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	221%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	129.51	10	\$804.14	0%	100%	\$935.44	125.24	125.24	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	Existing	2,483.70	15	\$358.09	6%	100%	\$17.84	6,738.08	6,738.08	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	Existing	2,992.43	15	\$1,513.66	1%	100%	\$62.59	761.98	761.98	PLHT-Miscellaneous-AEG-7
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	459.57	10	\$304.56	8%	100%	\$99.84	1,802.39	1,802.39	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	54%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	Existing	201.55	20	\$116.51	29%	100%	\$63.40	2,381.08	2,381.08	AEG Estimate
Single Family	Cooling	Central AC	12 kBtu/hr	New	36.15	14	\$133.62	39%	100%	\$525.33	261.06	263.24	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	5.22	10	\$0.01	22%	100%	\$0.30	20.32	20.32	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	30%	100%	\$31.77	783.34	693.10	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	New	74.84	15	\$7,492.42	1%	100%	\$9,999.00	4.01	4.01	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	181.31	14	\$53.94	30%	100%	\$31.77	0.00	57.02	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,683.39	13	\$694.04	62%	100%	\$33.11	10,280.95	10,280.95	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	2,834.39	12	\$679.49	5%	100%	\$181.59	31.17	33.95	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	New	21.53	12	\$1.71	100%	100%	(\$20.21)	908.96	910.23	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	4.69	20	\$30.05	100%	100%	\$31.62	642.61	648.84	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	New	25.43	10	\$2.15	100%	100%	(\$73.14)	894.20	854.90	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	New	34.28	12	\$7.97	100%	100%	(\$8.54)	364.38	335.14	USDOE SSL Projections - 2016
Single Family	Appliances	Clothes Dryer	1 units	New	41.76	15	\$252.88	92%	100%	\$547.04	189.34	189.34	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Dishwasher	1 units	New	53.22	15	\$78.17	92%	100%	(\$31.04)	475.89	475.89	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	New	15.91	15	\$43.80	100%	100%	\$340.62	52.60	52.60	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	New	46.10	21	\$56.02	72%	100%	\$137.63	81.16	81.16	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	New	17.68	15	\$43.80	44%	100%	\$306.56	28.35	28.35	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	New	192.48	19	\$335.85	89%	100%	\$195.12	1,119.94	1,119.94	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	New	8.51	11	\$4.77	98%	100%	\$81.50	77.28	77.28	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	New	63.97	4	\$14.83	64%	100%	\$65.14	104.42	104.42	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	New	80.95	5	\$8.47	77%	100%	\$24.83	198.52	198.52	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	New	18.48	4	\$58.89	219%	100%	\$895.59	51.29	51.29	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	New	52.50	6	\$0.01	208%	100%	\$0.04	307.41	307.41	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	New	13.34	6	\$20.51	64%	100%	\$261.89	18.25	18.25	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	221%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	New	129.51	10	\$804.14	0%	100%	\$935.44	20.31	20.31	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	New	2,483.70	15	\$358.09	6%	100%	\$17.84	1,276.69	1,276.69	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	New	2,992.43	15	\$1,513.66	1%	100%	\$62.59	145.91	145.91	PLHT-Miscellaneous-AEG-7
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	459.57	10	\$304.56	8%	100%	\$99.84	319.30	319.30	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	54%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	New	201.55	20	\$116.51	29%	100%	\$63.40	465.22	465.22	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	22.42	14	\$133.62	19%	100%	\$846.92	43.67	44.13	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	6.71	10	\$0.01	67%	100%	\$0.23	86.99	86.99	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	6%	100%	\$163.89	14.15	13.20	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	Existing	100.17	15	\$7,492.42	0%	100%	\$9,255.51	1.07	1.07	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	34.55	14	\$53.94	6%	100%	\$163.89	0.00	0.25	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	2,352.80	13	\$694.04	77%	100%	\$26.50	16,194.74	16,194.74	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	3,685.63	12	\$679.49	6%	100%	\$142.24	50.84	60.47	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	Existing	24.48	12	\$1.71	100%	100%	(\$17.94)	1,250.24	1,498.36	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	5.08	20	\$30.05	100%	100%	\$29.17	245.58	247.70	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	Existing	40.49	10	\$2.15	100%	100%	(\$46.11)	290.63	276.79	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	36.64	12	\$7.97	100%	100%	(\$7.98)	284.83	284.27	USDOE SSL Projections - 2016
Multifamily	Appliances	Clothes Dryer	1 units	Existing	33.01	15	\$252.88	52%	100%	\$692.06	118.30	118.30	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Dishwasher	1 units	Existing	53.22	15	\$78.17	80%	100%	(\$31.04)	590.92	590.92	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	Existing	15.91	15	\$43.80	100%	100%	\$340.62	66.00	66.00	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	Existing	46.10	21	\$56.02	21%	100%	\$137.63	35.74	35.74	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	Existing	17.68	15	\$43.80	5%	100%	\$306.56	3.70	3.70	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	Existing	155.03	19	\$335.85	98%	100%	\$242.25	1,163.78	1,163.78	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	Existing	8.51	11	\$4.77	95%	100%	\$81.50	117.28	117.28	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	Existing	63.97	4	\$14.83	36%	100%	\$65.14	137.84	137.84	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	Existing	80.95	5	\$8.47	43%	100%	\$24.83	236.97	236.97	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	Existing	18.48	4	\$58.89	160%	100%	\$895.59	83.73	83.73	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	Existing	52.50	6	\$0.01	153%	100%	\$0.04	364.93	364.93	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	13.34	6	\$20.51	36%	100%	\$261.89	16.76	16.76	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	166%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	0.00	15	\$358.09	0%	100%	\$0.00	0.00	0.00	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	2,992.43	15	\$1,513.66	0%	100%	\$62.59	98.36	98.36	PLHT-Miscellaneous-AEG-7
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	0.00	10	\$304.56	0%	100%	\$0.00	0.00	0.00	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	20%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	Existing	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	New	17.52	14	\$133.62	19%	100%	\$1,083.89	14.86	14.99	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	5.32	10	\$0.01	67%	100%	\$0.30	15.14	15.14	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	6%	100%	\$87.31	19.14	18.21	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	New	93.31	15	\$7,492.42	0%	100%	\$9,935.86	0.44	0.44	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	65.56	14	\$53.94	6%	100%	\$87.31	0.00	0.39	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	2,350.71	13	\$694.04	77%	100%	\$26.52	3,801.04	3,801.04	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	3,675.84	12	\$679.49	6%	100%	\$142.44	11.12	12.13	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	New	24.48	12	\$1.71	100%	100%	(\$17.94)	292.23	291.36	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	5.08	20	\$30.05	100%	100%	\$29.17	70.26	70.93	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	New	40.49	10	\$2.15	100%	100%	(\$46.11)	62.00	59.80	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	36.64	12	\$7.97	100%	100%	(\$7.98)	67.57	62.40	USDOE SSL Projections - 2016
Multifamily	Appliances	Clothes Dryer	1 units	New	33.01	15	\$252.88	52%	100%	\$692.06	30.28	30.28	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Dishwasher	1 units	New	53.22	15	\$78.17	80%	100%	(\$31.04)	150.41	150.41	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	New	15.91	15	\$43.80	100%	100%	\$340.62	18.97	18.97	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	New	46.10	21	\$56.02	21%	100%	\$137.63	8.48	8.48	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	New	17.68	15	\$43.80	5%	100%	\$306.56	1.10	1.10	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	New	155.03	19	\$335.85	98%	100%	\$242.25	328.76	328.76	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	New	8.51	11	\$4.77	95%	100%	\$81.50	27.82	27.82	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	New	63.97	4	\$14.83	36%	100%	\$65.14	21.10	21.10	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	New	80.95	5	\$8.47	43%	100%	\$24.83	40.12	40.12	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	New	18.48	4	\$58.89	160%	100%	\$895.59	13.56	13.56	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	New	52.50	6	\$0.01	153%	100%	\$0.04	81.34	81.34	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	13.34	6	\$20.51	36%	100%	\$261.89	3.70	3.70	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	166%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	New	0.00	15	\$358.09	0%	100%	\$0.00	0.00	0.00	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	New	2,992.43	15	\$1,513.66	0%	100%	\$62.59	26.08	26.08	PLHT-Miscellaneous-AEG-7
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	0.00	10	\$304.56	0%	100%	\$0.00	0.00	0.00	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	20%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	New	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	34.18	14	\$133.62	33%	100%	\$555.56	112.88	114.12	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	5.43	10	\$0.01	22%	100%	\$0.29	22.03	22.03	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	35%	100%	\$96.36	63.67	59.35	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	Existing	51.03	15	\$7,492.42	4%	100%	\$9,999.00	5.71	5.71	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	59.71	14	\$53.94	35%	100%	\$96.36	0.00	2.49	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,227.35	13	\$694.04	88%	100%	\$39.89	11,737.58	11,737.58	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	2,344.08	12	\$679.49	7%	100%	\$219.21	38.20	45.12	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	Existing	19.95	12	\$1.71	100%	100%	(\$20.70)	836.49	964.34	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	4.69	20	\$30.05	100%	100%	\$31.62	386.89	390.22	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	Existing	23.63	10	\$2.15	100%	100%	(\$78.62)	420.90	398.37	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	32.84	12	\$7.97	100%	100%	(\$8.62)	195.46	189.95	USDOE SSL Projections - 2016
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	52.07	15	\$252.88	93%	100%	\$438.66	213.77	213.77	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	Existing	53.22	15	\$78.17	79%	100%	(\$31.04)	371.88	371.88	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	Existing	15.91	15	\$43.80	100%	100%	\$340.62	42.23	42.23	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	Existing	46.10	21	\$56.02	71%	100%	\$137.63	78.39	78.39	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	17.68	15	\$43.80	34%	100%	\$306.56	16.96	16.96	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	Existing	233.37	19	\$335.85	95%	100%	\$160.93	1,112.86	1,112.86	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	Existing	8.51	11	\$4.77	98%	100%	\$81.50	74.80	74.80	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	Existing	63.97	4	\$14.83	57%	100%	\$65.14	138.98	138.98	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	Existing	80.95	5	\$8.47	68%	100%	\$24.83	238.93	238.93	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	Existing	18.48	4	\$58.89	192%	100%	\$895.60	63.99	63.99	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	Existing	52.50	6	\$0.01	213%	100%	\$0.04	325.63	325.63	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	13.34	6	\$20.51	57%	100%	\$261.89	16.89	16.89	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	206%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	2,483.70	15	\$358.09	4%	100%	\$17.84	852.03	852.03	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	2,992.43	15	\$1,513.66	0%	100%	\$62.59	30.72	30.72	PLHT-Miscellaneous-AEG-7
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	459.58	10	\$304.56	4%	100%	\$99.84	155.01	155.01	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	58%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	Existing	162.03	20	\$116.51	23%	100%	\$78.86	225.88	225.88	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	29.29	14	\$133.62	33%	100%	\$648.29	19.49	19.65	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	5.03	10	\$0.01	22%	100%	\$0.31	4.49	4.49	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	35%	100%	\$0.00	0.00	0.00	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	New	44.82	15	\$7,492.42	4%	100%	\$9,999.00	1.02	1.02	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	35%	100%	\$0.00	0.00	0.00	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,227.31	13	\$694.04	88%	100%	\$39.89	2,756.58	2,756.58	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	2,344.05	12	\$679.49	7%	100%	\$219.21	8.36	9.09	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	New	19.95	12	\$1.71	100%	100%	(\$20.70)	166.97	163.76	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	4.69	20	\$30.05	100%	100%	\$31.62	97.92	98.86	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	New	23.63	10	\$2.15	100%	100%	(\$78.62)	78.11	74.89	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	32.84	12	\$7.97	100%	100%	(\$8.62)	41.36	37.86	USDOE SSL Projections - 2016
Mobile Home	Appliances	Clothes Dryer	1 units	New	52.07	15	\$252.88	93%	100%	\$438.66	54.72	54.72	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	New	53.22	15	\$78.17	79%	100%	(\$31.04)	94.65	94.65	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	New	15.91	15	\$43.80	100%	100%	\$340.62	12.11	12.11	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	New	46.10	21	\$56.02	71%	100%	\$137.63	18.60	18.60	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	New	17.68	15	\$43.80	34%	100%	\$306.56	5.03	5.03	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	New	233.37	19	\$335.85	95%	100%	\$160.93	316.15	316.15	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	New	8.51	11	\$4.77	98%	100%	\$81.50	17.77	17.77	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	New	63.97	4	\$14.83	57%	100%	\$65.14	21.28	21.28	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	New	80.95	5	\$8.47	68%	100%	\$24.83	40.46	40.46	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	New	18.48	4	\$58.89	192%	100%	\$895.60	10.36	10.36	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	New	52.50	6	\$0.01	213%	100%	\$0.04	72.58	72.58	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	13.34	6	\$20.51	57%	100%	\$261.89	3.73	3.73	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	206%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	New	2,483.70	15	\$358.09	4%	100%	\$17.84	223.41	223.41	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	New	2,992.43	15	\$1,513.66	0%	100%	\$62.59	8.15	8.15	PLHT-Miscellaneous-AEG-7
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	459.58	10	\$304.56	4%	100%	\$99.84	38.22	38.22	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	58%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	New	162.03	20	\$116.51	23%	100%	\$78.86	61.47	61.47	AEG Estimate
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.22	45	\$1.32	22%	38%	\$76.25	1,736.79	1,890.21	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.51	45	\$1.32	22%	38%	\$76.25	7,195.16	7,552.31	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.03	45	\$1.15	22%	38%	\$297.36	268.24	291.94	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.35	45	\$1.15	22%	38%	\$297.36	1,686.83	1,770.56	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	Existing	48.63	15	\$631.36	4%	19%	\$212.27	391.04	425.58	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	Existing	335.09	15	\$631.36	4%	19%	\$212.27	1,617.33	1,697.61	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.03	45	\$1.63	0%	4%	\$115.46	107.01	116.46	INS_WLC-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.38	45	\$1.63	0%	4%	\$115.46	2,872.11	3,014.68	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.04	20	\$0.92	2%	2%	\$171.89	0.00	0.00	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.57	20	\$0.92	2%	2%	\$171.89	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.05	50	\$1.37	1%	1%	\$328.15	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.36	50	\$1.37	1%	1%	\$328.15	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.04	45	\$1.55	49%	60%	\$260.07	-94.77	-103.15	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.63	45	\$1.55	49%	60%	\$260.07	1,016.02	1,066.46	INS_FLR-Heating-RTF-SFv3.7-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	-0.01	45	\$1.37	0%	0%	\$1,559.52	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.09	45	\$1.37	0%	0%	\$1,559.52	0.00	0.00	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$143.79	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.66	70	\$0.95	2%	2%	\$143.79	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$143.79	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.66	70	\$0.95	2%	2%	\$143.79	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	Existing	64.06	18	\$528.00	52%	60%	\$139.08	203.41	223.72	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	Existing	394.13	18	\$528.00	52%	60%	\$139.08	799.24	855.46	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$645.73	23%	56%	\$89.03	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Space Heating	Ducting - Repair and Sealing	household	Existing	837.21	20	\$645.73	23%	56%	\$89.03	7,369.40	7,887.78	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.10	10	\$0.55	8%	19%	\$134.43	825.36	895.61	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.55	10	\$0.55	8%	19%	\$134.43	2,965.38	3,146.38	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	26%	56%	\$276.44	134.52	146.40	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.36	15	\$0.78	26%	56%	\$276.44	6,247.63	6,557.74	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	15	\$0.66	9%	19%	\$236.50	25.98	28.27	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.36	15	\$0.66	9%	19%	\$236.50	2,173.77	2,281.67	INF_CTRL-Heating-7PLN-SFv7-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.10	15	\$0.67	9%	19%	\$113.99	536.62	567.56	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.66	15	\$0.67	9%	19%	\$113.99	2,222.25	2,294.24	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.60	45	\$21.76	30%	68%	\$312.40	2,106.19	2,292.24	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.36	45	\$21.76	30%	68%	\$312.40	13,343.42	14,005.75	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$152.49	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	7.85	20	\$10.51	3%	8%	\$152.49	1,830.33	1,921.18	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.70	10	\$3.73	12%	56%	\$854.68	2,916.43	3,174.06	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	Existing	201.19	15	\$1,692.66	4%	19%	\$137.56	1,608.67	1,731.02	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	Existing	1,386.22	15	\$1,692.66	4%	19%	\$137.56	6,657.14	6,941.82	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	60%	80%	\$184.16	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	Existing	10.10	45	\$18.64	60%	80%	\$184.16	1,364.61	1,432.35	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	Existing	82.84	30	\$59.05	60%	80%	\$78.06	874.71	924.07	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	60%	80%	\$78.06	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	72.46	15	\$4,269.72	1%	75%	\$231.80	756.22	757.45	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	2,028.96	15	\$4,269.72	1%	75%	\$231.80	8,723.53	8,723.53	DHP-Heating-RTF-SFv4.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	129.27	15	\$4,269.72	1%	45%	\$121.10	1,262.42	1,360.62	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,376.55	15	\$4,269.72	1%	45%	\$121.10	12,956.97	12,956.97	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	946.57	20	\$1,348.08	0%	0%	\$162.27	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	3,710.60	15	\$3,379.23	0%	23%	\$99.66	7,390.02	7,390.02	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	Existing	668.44	2	\$80.50	7%	75%	\$60.32	3,843.75	3,843.75	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	669.38	3	\$18.46	0%	50%	\$9.83	4,720.08	4,727.76	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	88.52	6	\$285.43	7%	75%	\$720.73	1,307.79	1,382.96	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.64	15	\$601.89	65%	75%	\$122.97	1.17	1.25	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	621.75	15	\$601.89	65%	75%	\$122.97	1,222.86	1,255.36	ASHP_MNT-Heating-RTF-SFv3.4-1
Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	419.75	15	\$8,271.00	0%	20%	\$218.66	1,114.57	1,160.60	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	2,473.67	15	\$8,271.00	0%	20%	\$218.66	6,853.44	7,064.95	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	2,081.24	15	\$8,271.00	0%	20%	\$218.66	5,705.17	5,824.76	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.88	10	\$48.72	40%	75%	\$720.12	410.03	433.02	FN_WH-Cooling-CPUC-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Whole-House Fan - Installation	household	Existing	45.66	20	\$737.07	15%	40%	\$1,890.59	624.32	679.47	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	Existing	7.48	5	\$254.58	4%	56%	\$144.23	213.69	229.94	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	Existing	427.79	5	\$254.58	4%	56%	\$144.23	7,337.13	7,650.89	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	Existing	59.06	5	\$485.43	1%	19%	\$137.18	562.16	604.91	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	Existing	783.14	5	\$485.43	1%	19%	\$137.18	4,477.31	4,668.78	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	Existing	12.39	5	\$485.43	1%	19%	\$137.18	227.85	281.58	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	Existing	9.10	5	\$485.43	1%	19%	\$137.18	59.92	72.48	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	Existing	18.26	5	\$485.43	1%	19%	\$137.18	494.25	529.89	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	230.44	40	\$864.21	0%	0%	\$391.50	0.00	0.00	DHW_DWHR-Water Heating-7PLN-v3-1
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	110.66	15	\$5.30	34%	50%	(\$189.74)	2,069.42	2,140.21	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.68	10	\$0.01	51%	75%	(\$371.39)	1,581.41	1,684.75	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.09	15	\$3.37	12%	0%	\$17.80	0.00	0.00	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,552.70	20	\$1,175.39	0%	0%	\$88.97	178.11	184.83	DHW_DSH-Water Heating-RTF-v2.2-7
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	78.70	2	\$5.13	41%	75%	\$34.97	1,082.48	1,153.22	DHW_STBK-Water Heating-ILTRM-v4.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.78	10	\$16.82	16%	45%	\$52.46	1,098.82	1,170.63	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	Existing	1,161.68	20	\$9,127.71	2%	30%	\$923.51	6,563.66	6,706.02	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	Existing	322.82	12	\$72.03	0%	12%	\$40.58	1,492.06	1,527.70	RCIRCMPM_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	Existing	-57.64	12	\$72.03	0%	12%	\$40.58	-221.67	-227.10	RCIRCMPM_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.30	8	\$102.48	0%	5%	\$253.46	389.16	537.16	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.57	15	\$10.55	8%	50%	\$82.50	1,164.90	1,535.95	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.40	3	\$28.71	1%	30%	\$435.02	597.46	787.77	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.39	10	\$19.80	2%	50%	\$251.67	1,007.70	1,328.68	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	200.92	7	\$222.66	0%	75%	\$239.20	3,741.96	4,203.99	RFG_DEC-Appliances-RTF-v5.1-1
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	50%	\$131.13	5,320.12	5,428.40	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	39.35	5	\$37.31	8%	25%	\$216.89	1,068.21	950.72	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	75.43	5	\$50.76	8%	25%	\$153.94	2,047.69	1,822.48	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	1%	75%	\$3.59	2,401.06	2,444.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,526.92	20	\$3,900.44	0%	30%	\$286.08	70.55	71.17	PLHT_SOL-Miscellaneous-AEG-1

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Single Family	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$138.35	1,677.87	1,707.87	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	3.69	16	\$179.25	0%	30%	\$9,056.76	207.71	251.24	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	696.88	20	\$15,574.39	0%	0%	\$188.86	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	4,319.37	20	\$15,574.39	0%	0%	\$188.86	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,509.25	20	\$15,574.39	0%	0%	\$188.86	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	560.66	20	\$15,574.39	0%	0%	\$188.86	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	137.21	20	\$15,574.39	0%	0%	\$188.86	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,341.01	20	\$15,574.39	0%	0%	\$188.86	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	378.82	20	\$15,574.39	0%	0%	\$188.86	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	555.24	20	\$15,574.39	0%	0%	\$188.86	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Single Family	Cooling	Behavioral Programs	household	Existing	1.62	5	\$33.89	14%	14%	\$54.77	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	Existing	11.17	5	\$33.89	14%	14%	\$54.77	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	Existing	128.33	5	\$33.89	14%	14%	\$54.77	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	Existing	24.20	5	\$33.89	14%	14%	\$54.77	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$54.77	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$54.77	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$54.77	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$54.77	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.23	45	\$1.32	38%	38%	\$73.18	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	New	1.53	45	\$1.32	38%	38%	\$73.18	0.00	0.00	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.03	45	\$1.15	38%	38%	\$285.97	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.36	45	\$1.15	38%	38%	\$285.97	0.00	0.00	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	New	46.04	15	\$631.36	1%	5%	\$243.02	3.83	3.90	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	New	281.01	15	\$631.36	1%	5%	\$243.02	13.07	13.46	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.63	0%	0%	\$111.44	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.40	45	\$1.63	0%	0%	\$111.44	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.03	20	\$0.92	1%	15%	\$198.99	17.30	17.58	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.48	20	\$0.92	1%	15%	\$198.99	133.51	137.34	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.05	50	\$1.37	0%	5%	\$375.68	8.28	8.42	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.30	50	\$1.37	0%	5%	\$375.68	28.24	29.05	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.04	45	\$1.55	76%	76%	\$252.13	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.64	45	\$1.55	76%	76%	\$252.13	0.00	0.00	INS_FLR-Heating-RTF-SFv3.7-7
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	-0.01	45	\$1.37	0%	0%	\$1,512.13	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.09	45	\$1.37	0%	0%	\$1,512.13	0.00	0.00	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	New	-0.02	70	\$0.95	56%	56%	\$139.17	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	New	0.67	70	\$0.95	56%	56%	\$139.17	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.02	70	\$0.95	5%	19%	\$139.17	-2.95	-3.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.67	70	\$0.95	5%	19%	\$139.17	56.11	57.72	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	New	59.18	18	\$528.00	80%	80%	\$111.34	0.00	0.00	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	New	494.41	18	\$528.00	80%	80%	\$111.34	0.00	0.00	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$645.73	46%	56%	\$84.67	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Ducting - Repair and Sealing	household	New	853.62	20	\$645.73	46%	56%	\$84.67	93.54	96.52	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.09	10	\$0.55	15%	19%	\$146.55	10.23	10.69	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.49	10	\$0.55	15%	19%	\$146.55	33.49	34.51	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.00	15	\$0.78	53%	56%	\$266.94	0.32	0.32	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.36	15	\$0.78	53%	56%	\$266.94	13.47	13.86	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	15	\$0.66	18%	19%	\$228.44	0.12	0.12	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.36	15	\$0.66	18%	19%	\$228.44	9.24	9.51	INF_CTRL-Heating-7PLN-SFv7-2
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.09	15	\$0.67	18%	19%	\$130.50	2.98	3.01	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.55	15	\$0.67	18%	19%	\$130.50	10.17	10.37	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.62	45	\$21.76	43%	68%	\$300.44	61.88	62.87	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.46	45	\$21.76	43%	68%	\$300.44	359.28	369.60	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	5%	8%	\$147.35	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	New	7.97	20	\$10.51	5%	8%	\$147.35	49.28	50.70	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.72	10	\$3.73	12%	56%	\$781.76	101.27	103.21	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	New	190.48	15	\$1,692.66	4%	19%	\$157.49	75.20	76.27	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	New	1,162.52	15	\$1,692.66	4%	19%	\$157.49	256.51	263.13	WND_CELLSHD-HVAC-E3T-474-1

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Single Family	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	70%	80%	\$183.62	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	New	9.93	45	\$18.64	70%	80%	\$183.62	26.44	27.20	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	New	85.39	30	\$59.05	70%	80%	\$71.40	27.81	28.07	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	70%	80%	\$71.40	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	71.76	15	\$4,269.72	38%	75%	\$353.87	25.13	25.13	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,337.51	15	\$4,269.72	38%	75%	\$353.87	194.23	194.23	DHP-Heating-RTF-SFv4.1-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	110.82	15	\$4,031.10	23%	45%	\$118.32	38.80	40.37	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,272.17	15	\$4,031.10	23%	45%	\$118.32	421.98	421.98	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	960.79	20	\$1,348.08	0%	15%	\$156.81	301.65	305.69	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,446.06	15	\$3,379.23	0%	0%	\$151.19	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	New	440.64	2	\$80.50	45%	75%	\$91.50	6.43	6.43	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	662.91	3	\$18.46	25%	50%	\$9.89	54.86	54.86	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	75.88	6	\$285.43	45%	75%	\$809.41	19.27	19.95	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.66	15	\$601.89	25%	75%	\$119.25	0.45	0.45	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	629.35	15	\$601.89	25%	75%	\$119.25	423.46	427.89	ASHP_MNT-Heating-RTF-SFv3.4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	393.30	15	\$8,271.00	5%	20%	\$233.27	173.27	176.71	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	2,173.87	15	\$8,271.00	5%	20%	\$233.27	977.91	990.92	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,920.11	15	\$8,271.00	5%	20%	\$233.27	871.78	875.92	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.22	10	\$48.72	50%	75%	\$658.68	12.49	12.62	FN_WH-Cooling-CPUC-1
Single Family	Cooling	Whole-House Fan - Installation	household	New	47.06	20	\$737.07	15%	40%	\$1,729.29	27.24	27.67	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	New	7.71	5	\$254.58	4%	56%	\$139.24	6.10	6.21	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	New	434.21	5	\$254.58	4%	56%	\$139.24	191.86	197.89	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	New	55.91	5	\$485.43	1%	19%	\$157.35	14.73	15.00	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	New	656.76	5	\$485.43	1%	19%	\$157.35	96.73	99.77	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	New	13.49	5	\$485.43	1%	19%	\$157.35	6.64	8.05	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	New	9.93	5	\$485.43	1%	19%	\$157.35	1.74	2.06	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	New	17.41	5	\$485.43	1%	19%	\$157.35	12.93	13.55	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	238.84	40	\$864.21	1%	10%	\$360.71	55.15	55.43	DHW_DWHR-Water Heating-7PLN-v3-1

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Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	114.69	15	\$5.30	43%	50%	(\$174.81)	50.85	51.27	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	75%	75%	(\$342.18)	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$16.40	131.12	133.03	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,457.41	20	\$1,175.39	0%	0%	\$90.52	10.10	10.17	DHW_DSH-Water Heating-RTF-v2.2-1
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$32.22	6.91	7.08	DHW_STBK-Water Heating-ILTRM-v4.0-3
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$48.33	37.21	37.83	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	New	1,204.05	20	\$9,127.71	2%	30%	\$850.87	1,173.90	1,179.16	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	New	334.60	12	\$72.03	1%	10%	\$37.00	70.11	70.51	RCIRCMPM_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	New	-58.51	12	\$72.03	1%	10%	\$37.00	-9.80	-9.95	RCIRCMPM_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	121.36	8	\$102.48	0%	5%	\$228.57	11.62	15.11	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.14	15	\$10.55	3%	50%	\$74.48	55.57	66.39	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.05	3	\$28.71	1%	30%	\$523.64	5.85	8.06	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.57	10	\$19.80	0%	50%	\$227.21	35.77	43.89	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.39	7	\$222.66	0%	75%	\$197.62	239.95	239.95	RFG_DEC-Appliances-RTF-v5.1-1

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Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	238.82	6	\$145.11	0%	50%	\$126.86	241.29	241.29	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	35.56	5	\$37.31	8%	25%	\$223.50	29.91	25.48	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	68.16	5	\$50.76	8%	25%	\$158.63	57.33	48.84	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	1%	75%	\$3.48	148.06	148.06	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,465.70	20	\$3,900.44	0%	30%	\$291.84	13.33	13.33	PLHT_SOL-Miscellaneous-AEG-1
Single Family	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$141.14	62.86	62.86	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	3.93	16	\$179.25	0%	30%	\$8,176.28	10.51	11.96	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	New	136.23	45	\$6,198.54	14%	68%	\$537.07	368.69	371.29	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	New	731.79	45	\$6,198.54	14%	68%	\$537.07	1,937.99	1,966.54	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	New	26.85	45	\$6,198.54	14%	68%	\$537.07	71.52	71.97	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	357.11	45	\$6,198.54	14%	68%	\$537.07	541.19	591.39	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	718.35	20	\$15,574.39	2%	8%	\$178.80	148.39	149.44	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	4,384.22	20	\$15,574.39	2%	8%	\$178.80	886.25	899.26	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,564.28	20	\$15,574.39	2%	8%	\$178.80	318.02	320.02	RES_ADVNC_ZNE-AII-PGE-3

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Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	595.29	20	\$15,574.39	2%	8%	\$178.80	68.86	74.87	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	146.02	20	\$15,574.39	2%	8%	\$178.80	18.02	19.50	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,365.68	20	\$15,574.39	2%	8%	\$178.80	291.56	289.78	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	398.22	20	\$15,574.39	2%	8%	\$178.80	105.71	95.55	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	546.85	20	\$15,574.39	2%	8%	\$178.80	196.32	157.94	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Cooling	Behavioral Programs	household	New	1.83	5	\$33.89	14%	14%	\$50.52	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	New	11.17	5	\$33.89	14%	14%	\$50.52	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	New	133.01	5	\$33.89	14%	14%	\$50.52	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	New	25.69	5	\$33.89	14%	14%	\$50.52	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$50.52	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$50.52	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$50.52	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$50.52	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.17	45	\$0.78	14%	38%	\$70.51	275.60	283.84	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.89	45	\$0.78	14%	38%	\$70.51	1,451.46	1,466.31	INS_CLG-Heating-RTF-MFv3.4-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.03	45	\$1.15	14%	38%	\$464.08	42.57	43.84	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.21	45	\$1.15	14%	38%	\$464.08	347.44	350.99	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	Existing	19.14	15	\$313.28	4%	19%	\$327.23	41.19	42.42	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	Existing	100.51	15	\$313.28	4%	19%	\$327.23	221.11	223.38	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.63	0%	4%	\$242.62	11.27	11.61	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	0.63	45	\$1.63	0%	4%	\$242.62	392.66	396.68	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.02	20	\$0.92	11%	11%	\$356.83	0.00	0.00	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.26	20	\$0.92	11%	11%	\$356.83	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.03	50	\$1.37	4%	4%	\$667.27	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.17	50	\$1.37	4%	4%	\$667.27	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	Existing	-0.01	45	\$1.04	14%	60%	\$572.42	-43.22	-44.51	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	Existing	0.19	45	\$1.04	14%	60%	\$572.42	601.42	607.57	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.00	45	\$0.92	0%	0%	\$240.02	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.37	45	\$0.92	0%	0%	\$240.02	0.00	0.00	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	Existing	-0.01	70	\$0.95	0%	0%	\$465.75	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	Existing	0.20	70	\$0.95	0%	0%	\$465.75	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	-0.01	70	\$0.95	0%	0%	\$465.75	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	0.20	70	\$0.95	0%	0%	\$465.75	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	Existing	11.04	18	\$528.00	3%	60%	\$5,871.76	25.44	27.87	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	Existing	0.00	18	\$528.00	3%	60%	\$5,871.76	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$322.87	23%	56%	\$137.52	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	Existing	260.42	20	\$322.87	23%	56%	\$137.52	752.57	765.28	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.07	10	\$0.55	8%	19%	\$201.39	29.67	32.10	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.35	10	\$0.55	8%	19%	\$201.39	298.22	302.68	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	38%	56%	\$782.13	8.61	8.87	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.12	15	\$0.78	38%	56%	\$782.13	519.11	524.42	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	15	\$0.66	13%	19%	\$378.52	1.66	1.71	INF_CTRL-Cooling-7PLN-SFv7-6
Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.22	15	\$0.66	13%	19%	\$378.52	180.62	182.46	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.06	15	\$0.67	13%	19%	\$231.78	32.66	33.31	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.30	15	\$0.67	13%	19%	\$231.78	181.37	182.63	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.42	45	\$21.76	24%	68%	\$556.55	260.54	268.32	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	3.37	45	\$21.76	24%	68%	\$556.55	2,142.50	2,164.42	WND_HE-Heating-RTF-SFv3.7-1

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Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$279.19	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	4.16	20	\$10.51	3%	8%	\$279.19	293.89	296.89	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.49	10	\$3.73	25%	56%	\$1,178.29	215.45	221.89	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	Existing	79.18	15	\$958.59	8%	19%	\$242.04	116.72	119.73	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	Existing	415.78	15	\$958.59	8%	19%	\$242.04	634.23	639.92	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	70%	80%	\$595.37	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	Existing	3.03	45	\$18.64	70%	80%	\$595.37	93.28	94.24	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	Existing	32.60	30	\$59.05	70%	80%	\$190.03	43.81	44.65	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	70%	80%	\$190.03	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	61.76	15	\$4,269.72	1%	75%	\$831.03	522.35	523.25	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	527.84	15	\$4,269.72	1%	75%	\$831.03	2,400.69	2,400.69	DHP-Heating-RTF-SFv4.1-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	49.05	15	\$4,269.72	1%	45%	\$566.00	62.38	67.27	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	834.27	15	\$4,269.72	1%	45%	\$566.00	2,960.84	2,960.84	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	283.91	20	\$1,348.08	0%	0%	\$524.62	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	916.81	15	\$3,379.23	0%	23%	\$403.37	1,676.83	1,676.83	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	Existing	165.16	2	\$80.50	1%	75%	\$244.12	932.45	932.45	FURN_MNT-Heating-AEG-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	570.55	3	\$18.46	0%	50%	\$11.54	3,239.54	3,245.14	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	33.59	6	\$285.43	1%	75%	\$1,897.91	68.60	72.59	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.23	15	\$601.89	65%	75%	\$516.30	0.02	0.02	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	149.38	15	\$601.89	65%	75%	\$516.30	15.25	15.80	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	156.65	15	\$4,104.00	0%	20%	\$201.44	113.50	118.14	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	769.46	15	\$4,104.00	0%	20%	\$201.44	620.74	625.78	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,732.08	15	\$4,104.00	0%	20%	\$201.44	1,284.03	1,312.39	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	11.07	10	\$48.72	40%	75%	\$678.32	105.71	107.78	FN_WH-Cooling-CPUC-1
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	17.97	20	\$737.07	2%	10%	\$4,602.37	22.36	23.03	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	Existing	2.94	5	\$254.58	4%	38%	\$463.73	14.21	14.58	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	Existing	128.31	5	\$254.58	4%	38%	\$463.73	640.67	646.42	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	Existing	23.24	5	\$485.43	1%	13%	\$420.69	37.38	38.35	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	Existing	234.89	5	\$485.43	1%	13%	\$420.69	390.95	394.46	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

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Multifamily	Interior Lighting	Connected Home Control System	household	Existing	5.81	5	\$485.43	1%	13%	\$420.69	16.27	20.77	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	Existing	3.46	5	\$485.43	1%	13%	\$420.69	3.92	4.69	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	Existing	12.25	5	\$485.43	1%	13%	\$420.69	45.73	44.67	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	191.78	40	\$864.21	0%	0%	\$470.88	0.00	0.00	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	54.19	15	\$5.30	13%	50%	(\$387.83)	509.86	527.62	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.62	10	\$0.01	19%	75%	(\$262.57)	870.28	928.16	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.08	15	\$3.37	12%	75%	\$17.83	1,027.06	1,095.37	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	1,292.21	20	\$1,175.39	0%	0%	\$107.01	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	78.65	2	\$5.13	41%	75%	\$35.03	352.33	375.76	DHW_STBK-Water Heating-ILTRM-v4.0-3
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.75	10	\$16.82	16%	45%	\$52.54	258.30	275.48	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	966.80	20	\$9,127.71	1%	10%	\$1,110.76	541.99	554.08	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	Existing	268.67	12	\$72.03	0%	28%	\$42.75	932.68	955.42	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	Existing	-17.29	12	\$72.03	0%	28%	\$42.75	-69.14	-69.51	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.69	8	\$102.48	0%	10%	\$275.08	93.51	136.32	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

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Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.57	15	\$10.55	1%	50%	\$82.35	121.36	158.46	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.41	3	\$28.71	1%	30%	\$434.26	53.37	69.69	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.40	10	\$19.80	1%	50%	\$251.23	91.44	119.39	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	209.77	7	\$222.66	0%	75%	\$209.14	128.69	133.34	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	50%	\$131.12	406.49	414.79	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	29.15	5	\$37.31	8%	25%	\$283.80	221.96	190.22	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	55.88	5	\$50.76	8%	25%	\$201.43	425.49	364.64	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	0.00	10	\$19.59	1%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,526.92	20	\$3,900.44	0%	30%	\$286.08	9.15	9.23	PLHT_SOL-Miscellaneous-AEG-1
Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	Existing	0.00	5	\$835.50	0%	30%	\$0.00	0.00	0.00	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.41	16	\$179.25	0%	30%	\$9,999.00	21.19	25.39	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3

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Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	234.33	20	\$7,727.88	0%	0%	\$191.09	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,336.79	20	\$7,727.88	0%	0%	\$191.09	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,257.92	20	\$7,727.88	0%	0%	\$191.09	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	295.69	20	\$7,727.88	0%	0%	\$191.09	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	58.78	20	\$7,727.88	0%	0%	\$191.09	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	832.37	20	\$7,727.88	0%	0%	\$191.09	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	280.76	20	\$7,727.88	0%	0%	\$191.09	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	245.06	20	\$7,727.88	0%	0%	\$191.09	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Cooling	Behavioral Programs	household	Existing	0.64	5	\$33.89	14%	14%	\$73.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	Existing	3.35	5	\$33.89	14%	14%	\$73.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	Existing	106.80	5	\$33.89	14%	14%	\$73.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	11.35	5	\$33.89	14%	14%	\$73.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

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Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$73.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$73.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$73.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$73.18	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.15	45	\$0.78	38%	38%	\$73.20	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.89	45	\$0.78	38%	38%	\$73.20	0.00	0.00	INS_CLG-Heating-RTF-MFv3.4-4
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.02	45	\$1.15	38%	38%	\$465.90	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.22	45	\$1.15	38%	38%	\$465.90	0.00	0.00	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	New	15.17	15	\$313.28	1%	5%	\$393.99	0.47	0.47	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	New	85.48	15	\$313.28	1%	5%	\$393.99	2.54	2.63	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.02	45	\$1.63	0%	0%	\$240.97	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	0.65	45	\$1.63	0%	0%	\$240.97	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.02	20	\$0.92	11%	15%	\$428.47	0.57	0.57	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.22	20	\$0.92	11%	15%	\$428.47	7.01	7.27	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.03	50	\$1.37	4%	5%	\$803.42	0.27	0.27	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.14	50	\$1.37	4%	5%	\$803.42	1.48	1.54	INS_WLS_SIDING-HVAC-E3T-287-1

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Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	New	-0.01	45	\$1.04	75%	75%	\$560.73	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	New	0.20	45	\$1.04	75%	75%	\$560.73	0.00	0.00	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.00	45	\$0.92	0%	0%	\$244.93	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.37	45	\$0.92	0%	0%	\$244.93	0.00	0.00	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	New	-0.01	70	\$0.95	56%	0%	\$458.55	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	New	0.21	70	\$0.95	56%	0%	\$458.55	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	-0.01	70	\$0.95	0%	0%	\$458.55	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	0.21	70	\$0.95	0%	0%	\$458.55	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	New	7.94	18	\$528.00	80%	80%	\$7,846.30	0.00	0.00	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	New	0.00	18	\$528.00	80%	80%	\$7,846.30	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$322.87	23%	56%	\$117.81	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	New	302.81	20	\$322.87	23%	56%	\$117.81	49.87	50.44	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.06	10	\$0.55	8%	19%	\$205.97	1.53	1.60	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.35	10	\$0.55	8%	19%	\$205.97	17.82	18.01	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.01	15	\$0.78	55%	56%	\$166.06	0.02	0.02	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.59	15	\$0.78	55%	56%	\$166.06	1.31	1.35	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	15	\$0.66	18%	19%	\$375.01	0.01	0.01	INF_CTRL-Cooling-7PLN-SFv7-6

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Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.22	15	\$0.66	18%	19%	\$375.01	0.90	0.93	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.05	15	\$0.67	18%	19%	\$279.07	0.18	0.18	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.26	15	\$0.67	18%	19%	\$279.07	1.01	1.03	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.36	45	\$21.76	34%	68%	\$558.68	10.16	10.26	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	3.47	45	\$21.76	34%	68%	\$558.68	94.25	97.72	WND_HE-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	4%	8%	\$276.27	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	New	4.28	20	\$10.51	4%	8%	\$276.27	12.93	13.40	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.42	10	\$3.73	40%	56%	\$1,340.95	4.63	4.68	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	New	62.77	15	\$958.59	13%	19%	\$291.42	3.41	3.44	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	New	353.64	15	\$958.59	13%	19%	\$291.42	18.72	19.35	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	80%	80%	\$607.90	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	New	3.02	45	\$18.64	80%	80%	\$607.90	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	New	28.14	30	\$59.05	80%	80%	\$216.26	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	80%	80%	\$216.26	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	48.74	15	\$4,269.72	38%	75%	\$1,349.23	18.64	18.64	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	320.88	15	\$4,269.72	38%	75%	\$1,349.23	66.45	66.45	DHP-Heating-RTF-SFv4.1-1

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Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	35.82	15	\$4,031.10	23%	45%	\$541.19	2.19	2.28	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	834.27	15	\$4,031.10	23%	45%	\$541.19	133.51	133.51	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	292.27	20	\$1,348.08	0%	15%	\$519.13	59.71	60.93	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	916.81	15	\$3,379.23	0%	0%	\$403.37	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	New	165.16	2	\$80.50	45%	75%	\$244.12	2.99	2.99	FURN_MNT-Heating-AEG-2
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	450.23	3	\$18.46	25%	50%	\$14.57	40.71	40.71	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	24.53	6	\$285.43	45%	75%	\$2,504.41	1.09	1.13	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.24	15	\$601.89	25%	75%	\$494.20	0.01	0.01	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	151.77	15	\$601.89	25%	75%	\$494.20	7.31	7.38	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	125.70	15	\$4,104.00	5%	20%	\$207.20	19.29	19.69	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	771.16	15	\$4,104.00	5%	20%	\$207.20	124.32	125.01	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,601.37	15	\$4,104.00	5%	20%	\$207.20	253.64	254.87	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.18	10	\$48.72	50%	75%	\$659.60	4.42	4.45	FN_WH-Cooling-CPUC-1

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Multifamily	Cooling	Whole-House Fan - Installation	household	New	15.51	20	\$737.07	2%	10%	\$5,237.75	1.13	1.14	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	New	2.54	5	\$254.58	4%	38%	\$460.20	0.47	0.48	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	New	132.09	5	\$254.58	4%	38%	\$460.20	24.12	25.07	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	New	18.43	5	\$485.43	1%	13%	\$495.94	1.14	1.16	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	New	199.79	5	\$485.43	1%	13%	\$495.94	12.16	12.64	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Interior Lighting	Connected Home Control System	household	New	7.15	5	\$485.43	1%	13%	\$495.94	0.81	0.99	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	New	4.25	5	\$485.43	1%	13%	\$495.94	0.20	0.23	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	New	11.86	5	\$485.43	1%	13%	\$495.94	1.87	1.80	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	199.19	40	\$864.21	0%	0%	\$432.74	0.00	0.00	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	56.20	15	\$5.30	9%	50%	(\$356.95)	51.89	52.30	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	75%	75%	(\$241.66)	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$16.41	64.20	65.12	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	1,215.48	20	\$1,175.39	0%	0%	\$108.60	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	81.57	2	\$5.13	51%	75%	\$32.24	3.36	3.44	DHW_STBK-Water Heating-ILTRM-v4.0-3

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Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.67	10	\$16.82	16%	45%	\$48.36	13.11	13.32	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	New	1,004.18	20	\$9,127.71	1%	10%	\$1,020.79	134.47	135.05	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	New	279.05	12	\$72.03	0%	0%	\$39.08	0.00	0.00	RCIRCMPM_UPG-AII-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	New	-17.80	12	\$72.03	0%	0%	\$39.08	0.00	0.00	RCIRCMPM_UPG-AII-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	122.38	8	\$102.48	2%	10%	\$251.67	3.46	4.60	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.15	15	\$10.55	0%	50%	\$74.38	7.93	9.29	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.06	3	\$28.71	1%	30%	\$522.95	0.78	1.06	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.58	10	\$19.80	0%	50%	\$226.91	4.80	5.77	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.39	7	\$222.66	0%	75%	\$197.62	9.22	9.22	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	238.82	6	\$145.11	0%	50%	\$126.85	25.01	25.01	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	26.31	5	\$37.31	8%	25%	\$292.32	9.64	7.87	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	50.44	5	\$50.76	8%	25%	\$207.48	18.47	15.08	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	0.00	10	\$19.59	1%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,465.70	20	\$3,900.44	0%	30%	\$291.84	2.39	2.39	PLHT_SOL-Miscellaneous-AEG-1

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Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	New	0.00	5	\$835.50	0%	30%	\$0.00	0.00	0.00	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	1.68	16	\$179.25	0%	30%	\$9,999.00	1.84	2.06	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	New	4.73	45	\$6,198.54	14%	68%	\$9,948.80	4.66	4.68	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	New	26.67	45	\$6,198.54	14%	68%	\$9,948.80	25.19	25.72	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	26.09	45	\$6,198.54	14%	68%	\$9,948.80	25.12	25.28	ESTARH-Water Heating-RTF-SFWAv3.1-3
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	6.31	45	\$6,198.54	14%	68%	\$9,948.80	3.07	3.36	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	236.73	20	\$7,727.88	2%	8%	\$183.94	17.78	17.87	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,333.69	20	\$7,727.88	2%	8%	\$183.94	96.13	98.15	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,304.61	20	\$7,727.88	2%	8%	\$183.94	95.88	96.46	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	315.49	20	\$7,727.88	2%	8%	\$183.94	11.72	12.74	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	62.56	20	\$7,727.88	2%	8%	\$183.94	2.83	3.03	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	842.38	20	\$7,727.88	2%	8%	\$183.94	65.19	64.79	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	294.68	20	\$7,727.88	2%	8%	\$183.94	30.23	26.61	RES_ADVNC_ZNE-AII-PGE-3

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Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	238.40	20	\$7,727.88	2%	8%	\$183.94	44.17	32.05	RES_ADVNC_ZNE-All-PGE-3
Multifamily	Cooling	Behavioral Programs	household	New	0.60	5	\$33.89	14%	14%	\$66.96	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	New	3.40	5	\$33.89	14%	14%	\$66.96	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	New	110.93	5	\$33.89	14%	14%	\$66.96	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	New	13.62	5	\$33.89	14%	14%	\$66.96	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$66.96	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$66.96	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$66.96	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$66.96	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.12	45	\$0.78	10%	38%	\$87.67	462.53	492.01	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	0.76	45	\$0.78	10%	38%	\$87.67	2,803.50	2,929.62	INS_CLG-Heating-RTF-MFv3.4-4
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.02	25	\$1.03	10%	38%	\$359.67	71.44	75.99	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.30	25	\$1.03	10%	38%	\$359.67	1,106.68	1,156.47	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	Existing	41.62	15	\$978.30	4%	19%	\$406.66	59.87	63.69	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	Existing	266.45	15	\$978.30	4%	19%	\$406.66	369.95	386.59	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.04	45	\$1.63	0%	4%	\$102.18	16.39	17.43	INS_WLC-Cooling-RTF-SFv3.7-1

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Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.54	45	\$1.63	0%	4%	\$102.18	656.96	686.52	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.03	20	\$0.92	11%	11%	\$196.55	0.00	0.00	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.50	20	\$0.92	11%	11%	\$196.55	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.06	50	\$1.37	4%	4%	\$287.93	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.41	50	\$1.37	4%	4%	\$287.93	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.02	45	\$1.04	7%	30%	\$340.51	-31.42	-33.42	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.32	45	\$1.04	7%	30%	\$340.51	503.12	525.75	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$1.37	7%	30%	\$776.24	-4.87	-5.18	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.20	25	\$1.37	7%	30%	\$776.24	309.80	323.73	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$279.02	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.34	70	\$0.95	0%	0%	\$279.02	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$279.02	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.34	70	\$0.95	0%	0%	\$279.02	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	Existing	59.11	18	\$528.00	48%	60%	\$143.77	48.44	53.32	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	Existing	377.97	18	\$528.00	48%	60%	\$143.77	391.04	411.01	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	18	\$442.54	23%	56%	\$61.54	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1

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Mobile Home	Space Heating	Ducting - Repair and Sealing	household	Existing	850.99	18	\$442.54	23%	56%	\$61.54	2,508.84	2,636.97	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.11	10	\$0.55	8%	19%	\$125.77	118.33	128.49	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.58	10	\$0.55	8%	19%	\$125.77	798.50	834.35	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	50%	56%	\$417.54	4.44	4.72	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.23	15	\$0.78	50%	56%	\$417.54	253.73	265.15	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	25	\$0.78	17%	19%	\$427.99	0.86	0.91	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.20	25	\$0.78	17%	19%	\$427.99	58.20	60.82	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.12	15	\$0.67	17%	19%	\$100.01	17.53	18.24	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.74	15	\$0.67	17%	19%	\$100.01	106.32	109.57	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.57	45	\$21.76	8%	68%	\$352.27	519.27	552.37	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	5.57	45	\$21.76	8%	68%	\$352.27	4,914.53	5,135.61	WND_HE-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.42	1%	8%	\$192.82	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	6.12	20	\$10.42	1%	8%	\$192.82	600.47	627.48	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.66	10	\$3.73	12%	56%	\$895.20	446.56	475.02	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	Existing	172.18	15	\$1,538.71	4%	19%	\$154.61	245.43	258.70	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	Existing	1,102.29	15	\$1,538.71	4%	19%	\$154.61	1,506.79	1,566.22	WND_CELLSHD-HVAC-E3T-474-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	60%	80%	\$230.07	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	Existing	8.03	45	\$18.64	60%	80%	\$230.07	312.14	326.18	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	Existing	70.89	30	\$59.05	60%	80%	\$89.94	132.59	137.76	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	60%	80%	\$89.94	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	74.91	15	\$4,269.72	0%	75%	\$298.22	133.07	133.29	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,561.40	15	\$4,269.72	0%	75%	\$298.22	708.15	708.15	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	111.99	15	\$4,269.72	0%	45%	\$192.44	163.50	176.15	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	2,467.87	15	\$4,269.72	0%	45%	\$192.44	6,071.22	6,071.22	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	752.69	20	\$1,348.08	0%	0%	\$202.73	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,712.02	15	\$3,379.23	0%	23%	\$147.19	3,398.22	3,398.22	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	Existing	488.55	2	\$80.50	7%	75%	\$82.53	1,748.44	1,748.44	FURN_MNT-Heating-AEG-2
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	691.96	3	\$18.46	0%	50%	\$9.51	819.52	820.84	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	76.68	6	\$285.43	7%	75%	\$830.93	164.40	173.86	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.53	15	\$601.89	65%	75%	\$177.83	0.20	0.21	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	430.34	15	\$601.89	65%	75%	\$177.83	166.02	170.62	ASHP_MNT-Heating-RTF-SFv3.4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	356.59	15	\$6,408.00	0%	20%	\$204.65	284.59	296.66	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	2,007.07	15	\$6,408.00	0%	20%	\$204.65	1,718.80	1,759.51	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,724.65	15	\$6,408.00	0%	20%	\$204.65	1,419.19	1,450.03	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.93	10	\$48.72	40%	75%	\$707.18	72.84	75.73	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	39.07	20	\$737.07	15%	40%	\$2,178.35	95.59	101.69	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	Existing	6.40	5	\$254.58	4%	56%	\$179.93	32.60	34.36	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	Existing	340.17	5	\$254.58	4%	56%	\$179.93	1,660.70	1,726.20	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	Existing	50.54	5	\$485.43	1%	19%	\$171.57	85.77	90.40	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	Existing	622.74	5	\$485.43	1%	19%	\$171.57	1,013.40	1,053.37	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Interior Lighting	Connected Home Control System	household	Existing	7.10	5	\$485.43	1%	19%	\$171.57	22.77	27.71	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	Existing	3.61	5	\$485.43	1%	19%	\$171.57	4.16	4.94	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	Existing	14.24	5	\$485.43	1%	19%	\$171.57	61.38	66.95	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	190.96	40	\$864.21	0%	0%	\$473.12	0.00	0.00	DHW_DWHR-Water Heating-7PLN-v3-1

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Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	101.95	15	\$5.30	28%	50%	(\$189.78)	620.01	641.54	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	91.53	10	\$0.01	42%	75%	(\$343.75)	374.63	399.56	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	25.05	15	\$3.37	12%	75%	\$17.86	747.97	797.73	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,286.67	20	\$1,175.39	0%	0%	\$107.52	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	78.57	2	\$5.13	41%	75%	\$35.08	256.59	273.66	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	51.70	10	\$16.82	16%	45%	\$52.61	188.11	200.63	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	962.65	20	\$9,127.71	0%	20%	\$1,116.04	874.57	894.04	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	Existing	267.51	12	\$72.03	0%	17%	\$48.68	400.16	409.88	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	Existing	-45.84	12	\$72.03	0%	17%	\$48.68	-67.20	-68.80	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	114.85	8	\$102.48	0%	10%	\$247.44	69.99	94.60	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	24.58	15	\$10.55	7%	50%	\$80.59	139.97	180.31	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	36.42	3	\$28.71	1%	30%	\$424.96	70.03	90.22	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	18.40	10	\$19.80	0%	50%	\$245.85	121.13	156.04	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	205.30	7	\$222.66	0%	75%	\$224.08	534.59	577.35	RFG_DEC-Appliances-RTF-v5.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	236.37	6	\$145.11	0%	50%	\$131.12	891.41	909.61	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	39.42	5	\$37.31	8%	25%	\$215.43	181.07	160.27	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	75.56	5	\$50.76	8%	25%	\$152.90	347.10	307.23	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	840.24	10	\$19.59	1%	75%	\$3.59	308.01	313.54	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,526.92	20	\$3,900.44	0%	30%	\$286.08	2.86	2.88	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,463.00	5	\$835.50	0%	30%	\$138.35	215.96	219.83	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.46	16	\$179.25	0%	30%	\$9,999.00	14.46	17.18	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	511.95	20	\$12,066.34	0%	0%	\$183.28	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	3,102.73	20	\$12,066.34	0%	0%	\$183.28	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,250.61	20	\$12,066.34	0%	0%	\$183.28	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3

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Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	319.60	20	\$12,066.34	0%	0%	\$183.28	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	54.11	20	\$12,066.34	0%	0%	\$183.28	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,456.03	20	\$12,066.34	0%	0%	\$183.28	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	362.40	20	\$12,066.34	0%	0%	\$183.28	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	419.90	20	\$12,066.34	0%	0%	\$183.28	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	Existing	1.39	5	\$33.89	14%	14%	\$68.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	Existing	8.88	5	\$33.89	14%	14%	\$68.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	Existing	106.34	5	\$33.89	14%	14%	\$68.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	13.86	5	\$33.89	14%	14%	\$68.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$68.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$68.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$68.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	14%	14%	\$68.34	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.11	45	\$0.78	38%	38%	\$96.46	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	New	0.67	45	\$0.78	38%	38%	\$96.46	0.00	0.00	INS_CLG-Heating-RTF-MFv3.4-4

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Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.02	25	\$1.03	38%	38%	\$349.97	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.30	25	\$1.03	38%	38%	\$349.97	0.00	0.00	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	New	33.70	15	\$978.30	1%	5%	\$519.36	0.76	0.75	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	New	200.78	15	\$978.30	1%	5%	\$519.36	4.06	4.11	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.63	0%	0%	\$109.46	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.41	45	\$1.63	0%	0%	\$109.46	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.02	20	\$0.92	11%	15%	\$253.22	0.63	0.62	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.37	20	\$0.92	11%	15%	\$253.22	8.73	8.83	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.05	50	\$1.37	4%	5%	\$367.71	0.44	0.44	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.31	50	\$1.37	4%	5%	\$367.71	2.38	2.40	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.02	45	\$1.04	38%	38%	\$364.85	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.29	45	\$1.04	38%	38%	\$364.85	0.00	0.00	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$1.37	38%	38%	\$750.16	0.00	0.00	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.20	25	\$1.37	38%	38%	\$750.16	0.00	0.00	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$298.95	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	New	0.31	70	\$0.95	0%	0%	\$298.95	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$298.95	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.31	70	\$0.95	0%	0%	\$298.95	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	New	49.65	18	\$528.00	80%	80%	\$134.87	0.00	0.00	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	New	401.83	18	\$528.00	80%	80%	\$134.87	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	0.00	18	\$442.54	22%	56%	\$59.37	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Space Heating	Ducting - Repair and Sealing	household	New	859.84	18	\$442.54	22%	56%	\$59.37	155.13	157.19	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.09	10	\$0.55	7%	19%	\$159.83	6.56	6.63	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.44	10	\$0.55	7%	19%	\$159.83	38.60	39.10	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.02	15	\$0.78	56%	56%	\$380.44	0.00	0.00	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.24	15	\$0.78	56%	56%	\$380.44	0.00	0.00	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	25	\$0.78	19%	19%	\$414.73	0.00	0.00	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.20	25	\$0.78	19%	19%	\$414.73	0.00	0.00	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.09	15	\$0.67	19%	19%	\$127.73	0.00	0.00	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.56	15	\$0.67	19%	19%	\$127.73	0.00	0.00	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.50	25	\$21.76	50%	68%	\$421.79	8.51	8.44	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	5.08	25	\$21.76	50%	68%	\$421.79	77.82	78.72	WND_HE-Heating-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.42	6%	8%	\$186.61	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	New	6.18	20	\$10.42	6%	8%	\$186.61	10.53	10.65	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.58	10	\$3.73	12%	56%	\$956.06	19.89	19.71	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	New	139.42	15	\$1,538.71	4%	19%	\$197.46	14.93	14.82	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	New	830.62	15	\$1,538.71	4%	19%	\$197.46	79.86	80.70	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	70%	80%	\$254.32	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	New	7.10	45	\$18.64	70%	80%	\$254.32	8.22	8.31	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	New	62.50	30	\$59.05	70%	80%	\$96.06	5.60	5.57	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	70%	80%	\$96.06	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	69.09	15	\$4,269.72	38%	75%	\$417.46	5.51	5.51	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,125.52	15	\$4,269.72	38%	75%	\$417.46	23.08	23.08	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	83.17	15	\$4,031.10	23%	45%	\$251.16	5.96	6.07	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	1,778.94	15	\$4,031.10	23%	45%	\$251.16	195.03	195.03	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	686.48	20	\$1,348.08	0%	15%	\$217.18	94.14	94.75	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	1,954.93	15	\$3,379.23	0%	0%	\$204.19	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	New	352.17	2	\$80.50	45%	75%	\$114.49	4.37	4.37	FURN_MNT-Heating-AEG-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	638.26	3	\$18.46	25%	50%	\$10.28	12.03	12.03	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	56.95	6	\$285.43	45%	75%	\$1,060.80	2.97	3.02	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.44	15	\$601.89	25%	75%	\$209.80	0.08	0.08	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	354.56	15	\$601.89	25%	75%	\$209.80	64.69	64.69	ASHP_MNT-Heating-RTF-SFv3.4-1
Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	283.14	15	\$6,408.00	5%	20%	\$237.38	52.88	53.15	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,516.86	15	\$6,408.00	5%	20%	\$237.38	282.10	283.97	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,593.54	15	\$6,408.00	5%	20%	\$237.38	292.39	293.74	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.22	10	\$48.72	50%	75%	\$648.34	3.52	3.50	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	34.45	20	\$737.07	15%	40%	\$2,326.44	5.38	5.33	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	New	5.65	5	\$254.58	4%	56%	\$192.74	1.22	1.21	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	New	310.24	5	\$254.58	4%	56%	\$192.74	59.82	60.55	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	New	40.93	5	\$485.43	1%	19%	\$218.53	2.94	2.91	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	New	469.26	5	\$485.43	1%	19%	\$218.53	30.16	30.53	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	Connected Home Control System	household	New	7.69	5	\$485.43	1%	19%	\$218.53	1.00	1.18	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	New	3.91	5	\$485.43	1%	19%	\$218.53	0.18	0.21	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	New	13.57	5	\$485.43	1%	19%	\$218.53	2.45	2.61	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	198.22	40	\$864.21	1%	10%	\$434.70	16.86	16.94	DHW_DWHR-Water Heating-7PLN-v3-1
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	105.83	15	\$5.30	29%	50%	(\$174.36)	55.96	56.40	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	95.02	10	\$0.01	75%	75%	(\$315.82)	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	26.01	15	\$3.37	12%	75%	\$16.41	46.85	47.50	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,209.53	20	\$1,175.39	0%	0%	\$109.09	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	81.56	2	\$5.13	51%	75%	\$32.23	2.45	2.51	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.66	10	\$16.82	16%	45%	\$48.34	9.56	9.72	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	New	999.26	20	\$9,127.71	0%	20%	\$1,025.40	217.01	217.94	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	New	277.69	12	\$72.03	1%	10%	\$43.39	21.45	21.57	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	New	-41.80	12	\$72.03	1%	10%	\$43.39	-3.06	-3.08	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	121.95	8	\$102.48	0%	10%	\$225.30	3.12	3.92	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	26.16	15	\$10.55	11%	50%	\$72.78	8.08	9.39	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	29.07	3	\$28.71	1%	30%	\$511.66	1.03	1.36	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.59	10	\$19.80	3%	50%	\$222.01	5.95	7.08	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	213.39	7	\$222.66	0%	75%	\$197.62	42.31	42.31	RFG_DEC-Appliances-RTF-v5.1-1
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	238.82	6	\$145.11	0%	50%	\$126.86	54.85	54.85	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	35.68	5	\$37.31	8%	25%	\$221.86	7.86	6.66	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	68.40	5	\$50.76	8%	25%	\$157.46	15.07	12.78	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	849.00	10	\$19.59	1%	75%	\$3.48	25.77	25.77	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,465.70	20	\$3,900.44	0%	30%	\$291.84	0.75	0.75	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	New	1,404.34	5	\$835.50	0%	30%	\$141.14	10.98	10.98	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	1.55	16	\$179.25	0%	30%	\$9,999.00	1.11	1.24	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	10.52	45	\$6,198.54	14%	68%	\$5,807.01	6.77	6.74	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	New	62.65	45	\$6,198.54	14%	68%	\$5,807.01	39.09	39.35	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	25.96	45	\$6,198.54	14%	68%	\$5,807.01	15.95	16.04	ESTARH-Water Heating-RTF-SFWAv3.1-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	6.79	45	\$6,198.54	14%	68%	\$5,807.01	2.44	2.63	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	525.81	20	\$12,066.34	2%	8%	\$173.91	25.85	25.72	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	3,132.52	20	\$12,066.34	2%	8%	\$173.91	149.20	150.18	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,298.23	20	\$12,066.34	2%	8%	\$173.91	60.86	61.22	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	339.37	20	\$12,066.34	2%	8%	\$173.91	9.31	9.98	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	57.59	20	\$12,066.34	2%	8%	\$173.91	1.71	1.82	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,476.65	20	\$12,066.34	2%	8%	\$173.91	72.99	72.43	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	380.53	20	\$12,066.34	2%	8%	\$173.91	23.48	21.16	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	412.49	20	\$12,066.34	2%	8%	\$173.91	33.45	27.06	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	New	1.34	5	\$33.89	14%	14%	\$63.53	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	New	7.98	5	\$33.89	14%	14%	\$63.53	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	New	110.38	5	\$33.89	14%	14%	\$63.53	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	New	14.65	5	\$33.89	14%	14%	\$63.53	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$63.53	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$63.53	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$63.53	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	14%	14%	\$63.53	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

Wyoming Residential Measures Assumptions

Table I-5 Summary of Residential Measure Assumptions in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Central AC	12 kBtu/hr	Existing	25.27	14	\$133.62	35%	100%	\$786.39	496.42	583.26	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	Existing	4.98	10	\$0.01	16%	100%	\$0.33	59.79	70.10	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	1%	100%	\$124.08	19.86	21.43	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	Existing	72.02	15	\$7,492.42	16%	100%	\$9,999.00	175.93	195.96	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	43.75	14	\$53.94	1%	100%	\$124.08	0.00	0.48	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,553.34	13	\$694.04	26%	100%	\$36.60	20,689.66	24,075.45	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	3,225.46	12	\$31.27	2%	100%	\$821.89	67.76	92.36	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	Existing	20.17	12	\$1.71	100%	100%	(\$26.54)	5,019.50	7,696.10	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	Existing	3.92	20	\$30.05	100%	100%	\$33.57	2,662.89	3,066.84	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	Existing	22.33	10	\$2.15	100%	100%	(\$92.86)	5,556.56	6,873.27	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	Existing	34.25	12	\$7.97	100%	100%	(\$12.10)	2,291.27	3,100.45	USDOE SSL Projections - 2016
Single Family	Appliances	Clothes Dryer	1 units	Existing	37.36	15	\$252.88	91%	100%	\$627.91	774.49	886.82	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Dishwasher	1 units	Existing	47.62	15	\$78.17	92%	100%	(\$49.88)	1,989.02	2,422.21	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	Existing	14.21	15	\$43.80	100%	100%	\$399.75	223.92	250.20	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	Existing	39.09	21	\$56.02	87%	100%	\$169.29	433.16	483.16	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	Existing	15.79	15	\$43.80	43%	100%	\$359.78	106.65	118.99	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	Existing	172.23	19	\$335.85	79%	100%	\$227.22	3,371.82	3,964.17	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	Existing	7.61	11	\$4.77	98%	100%	\$96.23	339.84	406.58	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	Existing	57.24	4	\$14.83	57%	100%	\$78.61	625.59	806.71	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	Existing	72.43	5	\$8.47	68%	100%	\$29.84	1,079.84	1,398.47	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	Existing	16.53	4	\$58.89	235%	100%	\$1,080.86	353.23	454.54	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	Existing	46.98	6	\$0.01	215%	100%	\$0.05	1,502.64	1,896.40	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	Existing	11.94	6	\$20.51	57%	100%	\$311.31	77.94	97.50	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	233%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	Existing	115.88	10	\$804.14	0%	100%	\$1,106.30	31.43	35.34	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	Existing	2,222.38	15	\$358.09	1%	100%	\$20.90	786.68	954.94	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	Existing	2,677.59	15	\$1,513.66	0%	100%	\$73.32	29.14	34.49	PLHT-Miscellaneous-AEG-7
Single Family	Miscellaneous	Hot Tub/Spa	1 units	Existing	192.26	10	\$304.56	7%	100%	\$252.54	582.94	699.44	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	60%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	Existing	180.34	20	\$116.51	13%	100%	\$73.74	717.58	837.58	AEG Estimate
Single Family	Cooling	Central AC	12 kBtu/hr	New	24.93	14	\$133.62	35%	100%	\$796.97	244.25	281.16	AEG-BEST
Single Family	Cooling	Room AC	10.5 kBtu/hr	New	5.25	10	\$0.01	16%	100%	\$0.32	12.16	13.91	AEG-BEST
Single Family	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	1%	100%	\$81.28	24.22	26.39	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Cooling	Evaporative AC	36 kBtu/hr	New	71.42	15	\$7,492.42	16%	100%	\$9,999.00	88.25	97.23	EVAPCAC-Cooling-SCE-17R0-72
Single Family	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	67.25	14	\$53.94	1%	100%	\$81.28	0.00	0.52	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Single Family	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Single Family	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,542.08	13	\$694.04	26%	100%	\$36.76	4,550.25	5,203.68	AEG-BEST
Single Family	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	3,225.46	12	\$31.27	2%	100%	\$821.89	13.78	16.77	AEG-BEST
Single Family	Interior Lighting	General Service Screw-in	1 lamps	New	20.17	12	\$1.71	100%	100%	(\$26.54)	1,011.02	1,238.50	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Linear Lighting	1 lamps	New	3.92	20	\$30.05	100%	100%	\$33.57	663.04	761.77	USDOE SSL Projections - 2016
Single Family	Interior Lighting	Exempted Lighting	1 lamps	New	22.33	10	\$2.15	100%	100%	(\$92.86)	1,013.22	1,240.57	USDOE SSL Projections - 2016
Single Family	Exterior Lighting	Screw-in	1 lamps	New	34.25	12	\$7.97	100%	100%	(\$12.10)	471.77	546.77	USDOE SSL Projections - 2016
Single Family	Appliances	Clothes Dryer	1 units	New	37.36	15	\$252.88	91%	100%	\$627.91	186.40	210.09	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Appliances	Dishwasher	1 units	New	47.62	15	\$78.17	92%	100%	(\$49.88)	469.76	553.87	DWS-Appliances-AEO17-6
Single Family	Appliances	Refrigerator	1 units	New	14.21	15	\$43.80	100%	100%	\$399.75	61.38	67.76	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Freezer	1 units	New	39.09	21	\$56.02	87%	100%	\$169.29	103.68	115.10	FRZ-Appliances-RTF-v4.3-1
Single Family	Appliances	Second Refrigerator	1 units	New	15.79	15	\$43.80	43%	100%	\$359.78	29.01	32.04	RFG-Appliances-RTF-v4.3-3
Single Family	Appliances	Stove/Oven	1 units	New	172.23	19	\$335.85	79%	100%	\$227.22	933.74	1,083.74	STV-Appliances-7PLN-v3-9
Single Family	Appliances	Microwave	1 units	New	7.61	11	\$4.77	98%	100%	\$96.23	75.48	87.76	MCRW-Appliances-DOE-v2013-05-4
Single Family	Electronics	Personal Computers	1 units	New	57.24	4	\$14.83	57%	100%	\$78.61	89.53	113.35	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	Monitor	1 units	New	72.43	5	\$8.47	68%	100%	\$29.84	169.91	212.09	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Single Family	Electronics	Laptops	1 units	New	16.53	4	\$58.89	235%	100%	\$1,080.86	53.51	67.35	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Single Family	Electronics	TVs	1 units	New	46.98	6	\$0.01	215%	100%	\$0.05	314.61	375.93	REL_TV-Electronics-ESTAR-v7.0-7
Single Family	Electronics	Printer/Fax/Copier	1 units	New	11.94	6	\$20.51	57%	100%	\$311.31	16.13	19.27	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Single Family	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	233%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Single Family	Miscellaneous	Electric Vehicles	1 units	New	115.88	10	\$804.14	0%	100%	\$1,106.30	6.66	7.34	EVSE-Transportation-7PLN-v2-1
Single Family	Miscellaneous	Pool Pump	1 units	New	2,222.38	15	\$358.09	1%	100%	\$20.90	198.12	234.37	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Single Family	Miscellaneous	Pool Heater	1 units	New	2,677.59	15	\$1,513.66	0%	100%	\$73.32	7.42	8.60	PLHT-Miscellaneous-AEG-7
Single Family	Miscellaneous	Hot Tub/Spa	1 units	New	192.26	10	\$304.56	7%	100%	\$252.54	134.91	157.58	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	60%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Single Family	Miscellaneous	Well pump	1 units	New	180.34	20	\$116.51	13%	100%	\$73.74	189.70	219.37	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	Existing	8.40	14	\$133.62	22%	100%	\$2,365.92	17.25	20.29	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	Existing	1.87	10	\$0.01	31%	100%	\$0.89	6.90	8.09	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	1%	100%	\$576.54	0.95	1.02	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	Existing	85.68	15	\$7,492.42	2%	100%	\$9,999.00	4.12	4.60	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	9.30	14	\$53.94	1%	100%	\$576.54	0.00	0.02	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,184.82	13	\$694.04	45%	100%	\$42.78	4,734.36	5,516.60	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	2,772.38	12	\$31.27	4%	100%	\$956.20	14.95	20.52	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	Existing	20.59	12	\$1.71	100%	100%	(\$25.45)	810.44	1,185.86	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	Existing	4.17	20	\$30.05	100%	100%	\$31.62	182.01	209.81	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	Existing	39.55	10	\$2.15	100%	100%	(\$52.41)	234.98	290.23	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	Existing	40.96	12	\$7.97	100%	100%	(\$10.73)	233.71	334.95	USDOE SSL Projections - 2016
Multifamily	Appliances	Clothes Dryer	1 units	Existing	29.53	15	\$252.88	91%	100%	\$794.35	141.59	162.33	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Dishwasher	1 units	Existing	47.62	15	\$78.17	80%	100%	(\$49.88)	399.68	487.77	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	Existing	14.21	15	\$43.80	100%	100%	\$399.75	51.90	58.04	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	Existing	39.09	21	\$56.02	24%	100%	\$169.29	27.31	30.48	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	Existing	15.79	15	\$43.80	8%	100%	\$359.78	4.63	5.18	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	Existing	123.10	19	\$335.85	93%	100%	\$317.90	661.15	778.14	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	Existing	7.61	11	\$4.77	97%	100%	\$96.23	78.55	94.06	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	Existing	57.24	4	\$14.83	57%	100%	\$78.61	147.45	190.20	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	Existing	72.43	5	\$8.47	68%	100%	\$29.84	253.50	328.59	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	Existing	16.53	4	\$58.89	235%	100%	\$1,080.86	82.37	106.04	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	Existing	46.98	6	\$0.01	215%	100%	\$0.05	344.93	436.24	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	Existing	11.94	6	\$20.51	57%	100%	\$311.31	17.92	22.46	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	233%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	Existing	2,222.38	15	\$358.09	0%	100%	\$20.90	78.71	95.72	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	Existing	2,677.59	15	\$1,513.66	0%	100%	\$73.32	80.33	95.22	PLHT-Miscellaneous-AEG-7
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	Existing	192.26	10	\$304.56	1%	100%	\$252.54	10.51	12.63	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	34%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	Existing	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Multifamily	Cooling	Central AC	12 kBtu/hr	New	7.03	14	\$133.62	22%	100%	\$2,826.58	7.44	8.57	AEG-BEST
Multifamily	Cooling	Room AC	10.5 kBtu/hr	New	1.59	10	\$0.01	31%	100%	\$1.05	1.48	1.70	AEG-BEST
Multifamily	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	1%	100%	\$365.95	1.06	1.15	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Evaporative AC	36 kBtu/hr	New	81.10	15	\$7,492.42	2%	100%	\$9,999.00	2.05	2.26	EVAPCAC-Cooling-SCE-17R0-72
Multifamily	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	14.81	14	\$53.94	1%	100%	\$365.95	0.00	0.02	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Multifamily	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Multifamily	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,184.87	13	\$694.04	45%	100%	\$42.77	1,367.96	1,564.28	AEG-BEST
Multifamily	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	2,772.38	12	\$31.27	4%	100%	\$956.20	4.00	4.89	AEG-BEST
Multifamily	Interior Lighting	General Service Screw-in	1 lamps	New	20.59	12	\$1.71	100%	100%	(\$25.45)	257.03	308.41	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Linear Lighting	1 lamps	New	4.17	20	\$30.05	100%	100%	\$31.62	66.01	75.83	USDOE SSL Projections - 2016
Multifamily	Interior Lighting	Exempted Lighting	1 lamps	New	39.55	10	\$2.15	100%	100%	(\$52.41)	66.58	80.88	USDOE SSL Projections - 2016
Multifamily	Exterior Lighting	Screw-in	1 lamps	New	40.96	12	\$7.97	100%	100%	(\$10.73)	70.01	82.95	USDOE SSL Projections - 2016
Multifamily	Appliances	Clothes Dryer	1 units	New	29.53	15	\$252.88	91%	100%	\$794.35	44.74	50.43	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Appliances	Dishwasher	1 units	New	47.62	15	\$78.17	80%	100%	(\$49.88)	125.01	147.43	DWS-Appliances-AEO17-6
Multifamily	Appliances	Refrigerator	1 units	New	14.21	15	\$43.80	100%	100%	\$399.75	18.61	20.54	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Freezer	1 units	New	39.09	21	\$56.02	24%	100%	\$169.29	8.49	9.42	FRZ-Appliances-RTF-v4.3-1
Multifamily	Appliances	Second Refrigerator	1 units	New	15.79	15	\$43.80	8%	100%	\$359.78	1.64	1.81	RFG-Appliances-RTF-v4.3-3
Multifamily	Appliances	Stove/Oven	1 units	New	123.10	19	\$335.85	93%	100%	\$317.90	238.01	276.29	STV-Appliances-7PLN-v3-9
Multifamily	Appliances	Microwave	1 units	New	7.61	11	\$4.77	97%	100%	\$96.23	22.96	26.69	MCRW-Appliances-DOE-v2013-05-4
Multifamily	Electronics	Personal Computers	1 units	New	57.24	4	\$14.83	57%	100%	\$78.61	27.25	34.52	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	Monitor	1 units	New	72.43	5	\$8.47	68%	100%	\$29.84	51.62	64.49	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Multifamily	Electronics	Laptops	1 units	New	16.53	4	\$58.89	235%	100%	\$1,080.86	16.24	20.46	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Multifamily	Electronics	TVs	1 units	New	46.98	6	\$0.01	215%	100%	\$0.05	95.31	114.01	REL_TV-Electronics-ESTAR-v7.0-7
Multifamily	Electronics	Printer/Fax/Copier	1 units	New	11.94	6	\$20.51	57%	100%	\$311.31	4.89	5.85	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Multifamily	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	233%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Multifamily	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Multifamily	Miscellaneous	Pool Pump	1 units	New	2,222.38	15	\$358.09	0%	100%	\$20.90	25.73	30.45	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Multifamily	Miscellaneous	Pool Heater	1 units	New	2,677.59	15	\$1,513.66	0%	100%	\$73.32	26.56	30.82	PLHT-Miscellaneous-AEG-7
Multifamily	Miscellaneous	Hot Tub/Spa	1 units	New	192.26	10	\$304.56	1%	100%	\$252.54	3.19	3.72	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	34%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Multifamily	Miscellaneous	Well pump	1 units	New	0.00	20	\$116.51	0%	100%	\$0.00	0.00	0.00	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	Existing	29.11	14	\$133.62	26%	100%	\$682.63	77.59	91.27	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	Existing	5.69	10	\$0.01	25%	100%	\$0.29	19.02	22.34	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	Existing	0.00	14	\$53.94	1%	100%	\$113.88	0.67	0.73	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	Existing	48.46	15	\$7,492.42	29%	100%	\$9,999.00	38.77	43.22	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	Existing	48.55	14	\$53.94	1%	100%	\$113.88	0.00	0.06	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	Existing	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	Existing	1,542.05	13	\$694.04	37%	100%	\$36.76	5,239.34	6,105.01	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	Existing	3,225.46	12	\$31.27	3%	100%	\$821.89	17.15	23.44	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	Existing	17.92	12	\$1.71	100%	100%	(\$28.03)	676.94	979.36	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	Existing	3.92	20	\$30.05	100%	100%	\$33.57	168.79	194.57	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	Existing	20.10	10	\$2.15	100%	100%	(\$102.81)	355.58	437.48	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	Existing	34.05	12	\$7.97	100%	100%	(\$12.14)	152.16	206.54	USDOE SSL Projections - 2016
Mobile Home	Appliances	Clothes Dryer	1 units	Existing	46.59	15	\$252.88	91%	100%	\$503.51	171.84	197.01	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	Existing	47.62	15	\$78.17	79%	100%	(\$49.88)	303.50	370.40	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	Existing	14.21	15	\$43.80	100%	100%	\$399.75	39.95	44.67	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	Existing	39.09	21	\$56.02	84%	100%	\$169.29	74.11	82.73	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	Existing	15.79	15	\$43.80	25%	100%	\$359.78	10.96	12.23	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	Existing	208.82	19	\$335.85	43%	100%	\$187.41	399.26	469.91	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	Existing	7.61	11	\$4.77	99%	100%	\$96.23	60.62	72.68	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	Existing	57.24	4	\$14.83	57%	100%	\$78.61	113.43	146.31	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	Existing	72.43	5	\$8.47	68%	100%	\$29.84	195.00	252.77	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	Existing	16.53	4	\$58.89	235%	100%	\$1,080.86	63.36	81.57	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	Existing	46.98	6	\$0.01	215%	100%	\$0.05	265.33	335.57	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	Existing	11.94	6	\$20.51	57%	100%	\$311.31	13.79	17.27	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	Existing	0.00	5	\$0.00	233%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	Existing	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	Existing	2,222.38	15	\$358.09	1%	100%	\$20.90	80.93	98.42	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	Existing	2,677.59	15	\$1,513.66	0%	100%	\$73.32	22.44	26.60	PLHT-Miscellaneous-AEG-7
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	Existing	192.26	10	\$304.56	3%	100%	\$252.54	49.13	59.07	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Furnace Fan	1 units	Existing	0.00	18	\$0.00	67%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	Existing	144.98	20	\$116.51	13%	100%	\$91.73	97.67	114.11	AEG Estimate
Mobile Home	Cooling	Central AC	12 kBtu/hr	New	24.62	14	\$133.62	26%	100%	\$807.13	42.90	49.40	AEG-BEST
Mobile Home	Cooling	Room AC	10.5 kBtu/hr	New	5.13	10	\$0.01	25%	100%	\$0.32	4.34	4.97	AEG-BEST
Mobile Home	Cooling	Air-Source Heat Pump	36 kBtu/hr	New	0.00	14	\$53.94	1%	100%	\$73.71	1.20	1.33	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Cooling	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Evaporative AC	36 kBtu/hr	New	42.47	15	\$7,492.42	29%	100%	\$9,999.00	22.56	24.86	EVAPCAC-Cooling-SCE-17R0-72
Mobile Home	Space Heating	Air-Source Heat Pump	36 kBtu/hr	New	75.10	14	\$53.94	1%	100%	\$73.71	0.00	0.04	https://rtf.nwcouncil.org/measure/air-source-heat-pump-upgrades-sf
Mobile Home	Space Heating	Geothermal Heat Pump	12 kBtu/hr	New	0.00	25	\$777.78	0%	100%	\$0.00	0.00	0.00	AEG-BEST
Mobile Home	Water Heating	Water Heater (<= 55 Gal)	50 gallons	New	1,542.78	13	\$694.04	37%	100%	\$36.75	1,514.27	1,731.59	AEG-BEST
Mobile Home	Water Heating	Water Heater (> 55 Gal)	60 gallons	New	3,225.46	12	\$31.27	3%	100%	\$821.89	4.59	5.60	AEG-BEST
Mobile Home	Interior Lighting	General Service Screw-in	1 lamps	New	17.92	12	\$1.71	100%	100%	(\$28.03)	182.03	218.61	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Linear Lighting	1 lamps	New	3.92	20	\$30.05	100%	100%	\$33.57	54.16	62.22	USDOE SSL Projections - 2016
Mobile Home	Interior Lighting	Exempted Lighting	1 lamps	New	20.10	10	\$2.15	100%	100%	(\$102.81)	85.73	104.28	USDOE SSL Projections - 2016
Mobile Home	Exterior Lighting	Screw-in	1 lamps	New	34.05	12	\$7.97	100%	100%	(\$12.14)	39.53	45.96	USDOE SSL Projections - 2016
Mobile Home	Appliances	Clothes Dryer	1 units	New	46.59	15	\$252.88	91%	100%	\$503.51	54.30	61.20	CDR-Appliances-RTF-v2.1-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Appliances	Dishwasher	1 units	New	47.62	15	\$78.17	79%	100%	(\$49.88)	94.93	111.95	DWS-Appliances-AEO17-6
Mobile Home	Appliances	Refrigerator	1 units	New	14.21	15	\$43.80	100%	100%	\$399.75	14.29	15.78	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Freezer	1 units	New	39.09	21	\$56.02	84%	100%	\$169.29	23.02	25.55	FRZ-Appliances-RTF-v4.3-1
Mobile Home	Appliances	Second Refrigerator	1 units	New	15.79	15	\$43.80	25%	100%	\$359.78	3.89	4.30	RFG-Appliances-RTF-v4.3-3
Mobile Home	Appliances	Stove/Oven	1 units	New	208.82	19	\$335.85	43%	100%	\$187.41	143.73	166.85	STV-Appliances-7PLN-v3-9
Mobile Home	Appliances	Microwave	1 units	New	7.61	11	\$4.77	99%	100%	\$96.23	17.65	20.52	MCRW-Appliances-DOE-v2013-05-4
Mobile Home	Electronics	Personal Computers	1 units	New	57.24	4	\$14.83	57%	100%	\$78.61	20.96	26.56	REL_PCDT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	Monitor	1 units	New	72.43	5	\$8.47	68%	100%	\$29.84	39.71	49.61	REL_MN-Electronics-ESTAR-ESTAR v7.0-3
Mobile Home	Electronics	Laptops	1 units	New	16.53	4	\$58.89	235%	100%	\$1,080.86	12.49	15.74	REL_PCLT-Electronics-ESTAR-ESTAR v5.0-1
Mobile Home	Electronics	TVs	1 units	New	46.98	6	\$0.01	215%	100%	\$0.05	73.31	87.70	REL_TV-Electronics-ESTAR-v7.0-7
Mobile Home	Electronics	Printer/Fax/Copier	1 units	New	11.94	6	\$20.51	57%	100%	\$311.31	3.76	4.50	REL_SCF-Electronics-ESTAR-ESTAR v1.1-9
Mobile Home	Electronics	Set-top Boxes/DVRs	1 units	New	0.00	5	\$0.00	233%	100%	\$0.00	0.00	0.00	Voluntary Agreement
Mobile Home	Miscellaneous	Electric Vehicles	1 units	New	0.00	10	\$804.14	0%	100%	\$0.00	0.00	0.00	EVSE-Transportation-7PLN-v2-1
Mobile Home	Miscellaneous	Pool Pump	1 units	New	2,222.38	15	\$358.09	1%	100%	\$20.90	26.45	31.31	RPLPMP-Miscellaneous-AEG-AEGv2.1-2
Mobile Home	Miscellaneous	Pool Heater	1 units	New	2,677.59	15	\$1,513.66	0%	100%	\$73.32	7.42	8.61	PLHT-Miscellaneous-AEG-7
Mobile Home	Miscellaneous	Hot Tub/Spa	1 units	New	192.26	10	\$304.56	3%	100%	\$252.54	14.90	17.41	SPA-Miscellaneous-SCE-13_R2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Miscellaneous	Furnace Fan	1 units	New	0.00	18	\$0.00	67%	100%	\$0.00	0.00	0.00	DOE Rule: EERE-2010-BT-STD-0011
Mobile Home	Miscellaneous	Well pump	1 units	New	144.98	20	\$116.51	13%	100%	\$91.59	33.45	38.68	AEG Estimate
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.17	45	\$1.32	22%	38%	\$78.53	927.11	1,249.19	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.50	45	\$1.32	22%	38%	\$78.53	1,991.09	2,554.77	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.03	45	\$1.15	22%	0%	\$303.77	0.00	0.00	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.35	45	\$1.15	22%	0%	\$303.77	0.00	0.00	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	Existing	28.93	15	\$631.36	4%	19%	\$185.03	155.34	209.30	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	Existing	416.91	15	\$631.36	4%	19%	\$185.03	560.10	718.67	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.02	45	\$1.63	0%	4%	\$116.39	56.55	76.19	INS_WLC-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.37	45	\$1.63	0%	4%	\$116.39	786.76	1,009.49	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.92	2%	2%	\$202.64	0.00	0.00	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.51	20	\$0.92	2%	2%	\$202.64	0.00	0.00	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.03	50	\$1.37	1%	1%	\$281.36	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.45	50	\$1.37	1%	1%	\$281.36	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.03	45	\$1.55	25%	30%	\$257.95	-25.30	-34.08	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.62	45	\$1.55	25%	30%	\$257.95	140.58	180.38	INS_FLR-Heating-RTF-SFv3.7-7

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	45	\$1.37	25%	30%	\$1,545.91	-3.92	-5.28	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.09	45	\$1.37	25%	30%	\$1,545.91	20.84	26.74	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$143.93	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.66	70	\$0.95	2%	2%	\$143.93	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.02	70	\$0.95	2%	2%	\$143.93	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.66	70	\$0.95	2%	2%	\$143.93	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	Existing	33.56	18	\$528.00	52%	60%	\$127.72	49.98	69.55	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	Existing	468.36	18	\$528.00	52%	60%	\$127.72	109.69	142.92	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$645.73	23%	56%	\$89.83	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Space Heating	Ducting - Repair and Sealing	household	Existing	832.62	20	\$645.73	23%	56%	\$89.83	846.44	1,102.85	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.06	10	\$0.55	8%	19%	\$116.04	245.54	334.00	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.71	10	\$0.55	8%	19%	\$116.04	434.83	559.24	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	12%	56%	\$282.58	104.53	140.84	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.35	15	\$0.78	12%	56%	\$282.58	2,516.74	3,229.24	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	15	\$0.66	4%	19%	\$241.48	20.19	27.20	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.35	15	\$0.66	4%	19%	\$241.48	875.66	1,123.57	INF_CTRL-Heating-7PLN-SFv7-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.06	15	\$0.67	4%	19%	\$99.36	315.87	395.45	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.82	15	\$0.67	4%	19%	\$99.36	1,114.19	1,353.40	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.29	45	\$21.76	30%	68%	\$327.97	677.71	913.15	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	6.32	45	\$21.76	30%	68%	\$327.97	3,692.47	4,737.82	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$154.39	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	7.81	20	\$10.51	3%	8%	\$154.39	506.50	649.89	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.69	10	\$3.73	12%	56%	\$898.00	1,921.94	2,589.63	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	Existing	102.43	15	\$1,692.66	4%	19%	\$140.12	550.15	727.62	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	Existing	1,476.03	15	\$1,692.66	4%	19%	\$140.12	1,969.46	2,499.14	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	43%	80%	\$116.69	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	Existing	15.90	45	\$18.64	43%	80%	\$116.69	1,108.71	1,422.60	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	Existing	81.75	30	\$59.05	43%	80%	\$80.32	1,086.91	1,373.92	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	43%	80%	\$80.32	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	71.11	15	\$4,269.72	1%	75%	\$248.47	397.79	503.55	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,991.05	15	\$4,269.72	1%	75%	\$248.47	8,877.96	11,199.80	DHP-Heating-RTF-SFv4.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	126.46	15	\$4,269.72	1%	45%	\$123.43	1,044.98	1,421.05	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	3,486.89	15	\$4,269.72	1%	45%	\$123.43	3,141.26	3,967.82	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	941.07	20	\$1,348.08	0%	0%	\$164.30	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	3,641.27	15	\$3,379.23	0%	23%	\$105.69	1,695.29	2,163.79	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	Existing	732.24	2	\$80.50	7%	75%	\$60.07	963.80	1,159.94	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	Existing	635.20	3	\$18.46	0%	50%	\$11.24	2,384.68	3,018.66	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	56.50	6	\$285.43	7%	75%	\$1,210.29	726.81	917.57	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.63	15	\$601.89	65%	75%	\$128.92	0.05	0.06	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	613.50	15	\$601.89	65%	75%	\$128.92	49.79	63.70	ASHP_MNT-Heating-RTF-SFv3.4-1
Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	264.44	15	\$8,271.00	0%	20%	\$206.05	66.22	79.89	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	3,166.02	15	\$8,271.00	0%	20%	\$206.05	874.86	1,024.48	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,959.23	15	\$8,271.00	0%	20%	\$206.05	504.26	597.39	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.74	10	\$48.72	40%	75%	\$756.62	272.74	337.88	FN_WH-Cooling-CPUC-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Whole-House Fan - Installation	household	Existing	45.06	20	\$737.07	15%	0%	\$1,953.66	0.00	0.00	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	Existing	7.39	5	\$254.58	4%	56%	\$150.92	140.23	185.47	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	Existing	425.30	5	\$254.58	4%	56%	\$150.92	2,006.24	2,545.81	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	Existing	34.43	5	\$485.43	1%	19%	\$143.07	217.93	288.23	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	Existing	815.04	5	\$485.43	1%	19%	\$143.07	1,281.58	1,626.25	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	Existing	11.44	5	\$485.43	1%	19%	\$143.07	185.74	283.01	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	Existing	8.57	5	\$485.43	1%	19%	\$143.07	47.36	71.96	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	Existing	8.86	5	\$485.43	1%	19%	\$143.07	161.04	200.98	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	226.88	40	\$864.21	1%	5%	\$408.13	128.20	155.48	DHW_DWHR-Water Heating-7PLN-v3-1
Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	108.95	15	\$5.30	34%	0%	(\$211.99)	0.00	0.00	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	90.26	10	\$0.01	51%	75%	(\$414.24)	568.31	769.83	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	24.70	15	\$3.37	12%	75%	\$18.84	1,133.98	1,536.09	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	Existing	1,528.76	20	\$1,175.39	0%	0%	\$93.48	65.02	80.76	DHW_DSH-Water Heating-RTF-v2.2-7
Single Family	Water Heating	Water Heater - Temperature Setback	household	Existing	77.48	2	\$5.13	41%	0%	\$38.51	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-3

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Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	50.98	10	\$16.82	16%	45%	\$56.03	394.88	534.90	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	Existing	1,143.77	20	\$9,127.71	2%	30%	\$970.26	2,322.71	2,730.37	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	Existing	317.85	12	\$72.03	0%	12%	\$43.55	547.42	663.92	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	Existing	-57.31	12	\$72.03	0%	12%	\$43.55	-60.25	-71.65	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	119.53	8	\$102.48	0%	5%	\$247.99	359.37	614.94	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	25.87	15	\$10.55	8%	50%	\$81.73	1,029.49	1,727.43	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	38.32	3	\$28.71	1%	30%	\$446.22	528.01	885.98	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	19.37	10	\$19.80	2%	50%	\$251.75	890.56	1,494.32	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	197.48	7	\$222.66	0%	65%	\$258.22	2,538.95	3,606.67	RFG_DEC-Appliances-RTF-v5.1-1
Single Family	Appliances	Freezer - Decommissioning and Recycling	household	Existing	231.95	6	\$145.11	0%	10%	\$143.01	1,082.03	1,393.50	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.24	5	\$37.31	8%	25%	\$254.05	764.42	903.45	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	73.31	5	\$50.76	8%	25%	\$180.31	1,465.34	1,731.86	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	Existing	824.54	10	\$19.59	1%	75%	\$3.86	307.44	394.86	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,366.27	20	\$3,900.44	0%	30%	\$332.50	2.70	3.15	PLHT_SOL-Miscellaneous-AEG-1

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Single Family	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,435.67	5	\$835.50	0%	30%	\$151.48	214.84	275.93	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	3.89	16	\$179.25	0%	30%	\$8,958.07	183.56	278.90	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	419.48	20	\$15,574.39	0%	0%	\$193.35	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	5,261.30	20	\$15,574.39	0%	0%	\$193.35	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,437.69	20	\$15,574.39	0%	0%	\$193.35	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	587.18	20	\$15,574.39	0%	0%	\$193.35	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	146.57	20	\$15,574.39	0%	0%	\$193.35	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,197.44	20	\$15,574.39	0%	0%	\$193.35	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	334.52	20	\$15,574.39	0%	0%	\$193.35	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3

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Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	255.91	20	\$15,574.39	0%	0%	\$193.35	0.00	0.00	RES_ADVNC_ZNE-All-PGE-3
Single Family	Cooling	Behavioral Programs	household	Existing	0.83	5	\$33.89	37%	37%	\$58.68	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	Existing	11.89	5	\$33.89	37%	37%	\$58.68	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	Existing	126.35	5	\$33.89	37%	37%	\$58.68	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	Existing	25.31	5	\$33.89	37%	37%	\$58.68	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$58.68	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$58.68	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$58.68	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$58.68	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.18	45	\$1.32	15%	38%	\$77.48	89.82	114.62	INS_CLG-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Insulation - Ceiling Installation	sqft roof	New	1.51	45	\$1.32	15%	38%	\$77.48	177.08	223.26	INS_CLG-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.03	45	\$1.15	15%	38%	\$300.23	13.87	17.70	INS_CLG-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.35	45	\$1.15	15%	38%	\$300.23	41.52	52.34	INS_CLG-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Radiant Barrier	household	New	27.67	15	\$631.36	1%	5%	\$223.97	2.46	3.16	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Space Heating	Insulation - Radiant Barrier	household	New	339.93	15	\$631.36	1%	5%	\$223.97	7.11	8.99	INS_RB-HVAC-CMUATRM-2016-12
Single Family	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.63	0%	0%	\$115.36	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.38	45	\$1.63	0%	0%	\$115.36	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Single Family	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.92	1%	15%	\$247.45	5.73	7.31	AEG-BEST
Single Family	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.41	20	\$0.92	1%	15%	\$247.45	52.07	65.65	AEG-BEST
Single Family	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.03	50	\$1.37	0%	5%	\$340.58	5.35	6.83	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.37	50	\$1.37	0%	5%	\$340.58	15.43	19.45	INS_WLS_SIDING-HVAC-E3T-287-1
Single Family	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.03	45	\$1.55	38%	38%	\$256.54	-0.06	-0.08	INS_FLR-Cooling-RTF-SFv3.7-7
Single Family	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.63	45	\$1.55	38%	38%	\$256.54	0.32	0.41	INS_FLR-Heating-RTF-SFv3.7-7
Single Family	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	45	\$1.37	38%	38%	\$1,537.67	-0.01	-0.01	INS_FLR-Cooling-RTF-SFv3.7-10
Single Family	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.09	45	\$1.37	38%	38%	\$1,537.67	0.05	0.06	INS_FLR-Heating-RTF-SFv3.7-10
Single Family	Cooling	Insulation - Foundation	sqft floor cs	New	-0.02	70	\$0.95	6%	56%	\$143.01	-11.08	-14.14	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Foundation	sqft floor cs	New	0.66	70	\$0.95	6%	56%	\$143.01	88.53	111.61	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.02	70	\$0.95	2%	19%	\$143.01	-3.69	-4.71	INS_FND_B-Cooling-RTF-v3.1-1
Single Family	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.66	70	\$0.95	2%	19%	\$143.01	29.51	37.20	INS_FND_B-Heating-RTF-v3.1-1
Single Family	Cooling	Insulation - Ducting	household	New	39.20	18	\$528.00	79%	80%	\$95.45	0.40	0.53	AEG-BEST
Single Family	Space Heating	Insulation - Ducting	household	New	627.35	18	\$528.00	79%	80%	\$95.45	0.94	1.19	AEG-BEST
Single Family	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$645.73	46%	56%	\$88.30	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1

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Single Family	Space Heating	Ducting - Repair and Sealing	household	New	842.67	20	\$645.73	46%	56%	\$88.30	16.76	21.31	DCT_RPR-Heating-RTF-SFv4.2-1
Single Family	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.06	10	\$0.55	15%	19%	\$132.78	5.29	6.93	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.61	10	\$0.55	15%	19%	\$132.78	7.98	10.17	DCT_RPR_AERO-HVAC-E3T-178-1
Single Family	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.00	15	\$0.78	12%	56%	\$280.20	2.27	2.91	INF_CTRL-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.36	15	\$0.78	12%	56%	\$280.20	50.30	63.64	INF_CTRL-Heating-RTF-SFv3.7-1
Single Family	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	15	\$0.66	4%	19%	\$239.50	1.38	1.77	INF_CTRL-Cooling-7PLN-SFv7-6
Single Family	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.36	15	\$0.66	4%	19%	\$239.50	54.93	69.50	INF_CTRL-Heating-7PLN-SFv7-2
Single Family	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.05	15	\$0.67	4%	19%	\$120.27	30.79	36.76	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.67	15	\$0.67	4%	19%	\$120.27	86.16	102.46	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Single Family	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.50	45	\$21.76	42%	68%	\$315.38	53.13	67.80	WND_HE-Cooling-RTF-SFv3.7-1
Single Family	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	6.38	45	\$21.76	42%	68%	\$315.38	160.18	201.95	WND_HE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	5%	8%	\$153.17	0.00	0.00	n/a
Single Family	Space Heating	Windows - Low-e Storm Addition	sqft window	New	7.87	20	\$10.51	5%	8%	\$153.17	21.97	27.70	WND_LOWE-Heating-RTF-SFv3.7-1
Single Family	Cooling	Windows - Install Reflective Film	sqft window	New	0.71	10	\$3.73	12%	56%	\$844.49	104.34	136.36	WND_FLM-HVAC-CMUATRM-2016-12
Single Family	Cooling	Windows - Cellular Shades	household	New	97.96	15	\$1,692.66	4%	19%	\$169.61	43.34	55.00	WND_CELLSHD-HVAC-E3T-474-1
Single Family	Space Heating	Windows - Cellular Shades	household	New	1,203.47	15	\$1,692.66	4%	19%	\$169.61	124.38	156.15	WND_CELLSHD-HVAC-E3T-474-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	36%	80%	\$106.07	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Space Heating	Doors - Storm and Thermal	sqft door	New	17.49	45	\$18.64	36%	80%	\$106.07	93.59	117.99	DOR_TH-Heating-RTF-MFv3.4-1
Single Family	Cooling	HVAC - Plant Shade Trees	household	New	84.13	30	\$59.05	36%	80%	\$75.53	148.45	180.29	SHADETREE-Cooling-AEG-1
Single Family	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	36%	80%	\$75.53	0.00	0.00	SHADETREE-Cooling-AEG-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	75.00	15	\$4,269.72	1%	38%	\$315.97	15.92	19.89	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,573.87	15	\$4,269.72	1%	38%	\$315.97	271.25	338.39	DHP-Heating-RTF-SFv4.1-1
Single Family	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	117.94	15	\$4,031.10	1%	38%	\$117.15	67.69	87.74	DHP-Cooling-RTF-SFv4.1-1
Single Family	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	3,471.58	15	\$4,031.10	1%	38%	\$117.15	199.04	248.60	DHP-Heating-RTF-v1.6-1
Single Family	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	948.59	20	\$1,348.08	0%	15%	\$163.00	154.06	179.88	RES_HRV-Heating-7PLN-v1-2
Single Family	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	2,878.32	15	\$3,379.23	0%	0%	\$133.70	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Single Family	Space Heating	Furnace - Maintenance	household	New	578.81	2	\$80.50	7%	75%	\$75.99	5.06	6.58	FURN_MNT-Heating-AEG-2
Single Family	Cooling	Room AC - Removal of Second Unit	household	New	669.92	3	\$18.46	0%	50%	\$10.62	68.66	87.85	RAC_RMV-Cooling-DEER-1
Single Family	Cooling	Central AC - Maintenance and Tune-Up	household	New	52.69	6	\$285.43	45%	75%	\$1,250.29	16.78	20.55	CAC_MNT-Cooling-ILTRM-v4.0-1
Single Family	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.65	15	\$601.89	25%	75%	\$125.77	0.02	0.03	ASHP_MNT-Cooling-RTF-SFv3.4-1
Single Family	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	621.51	15	\$601.89	25%	75%	\$125.77	20.03	25.06	ASHP_MNT-Heating-RTF-SFv3.4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Single Family	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	247.84	15	\$8,271.00	5%	20%	\$226.81	12.53	14.67	RES_ASIHP-Cooling-AEG-NEEA-1
Single Family	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	2,726.63	15	\$8,271.00	5%	20%	\$226.81	144.08	166.49	RES_ASIHP-Heating-AEG-NEEA-1
Single Family	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,834.51	15	\$8,271.00	5%	20%	\$226.81	95.55	110.12	RES_ASIHP-Water Heating-AEG-NEEA-1
Single Family	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.05	10	\$48.72	40%	75%	\$711.53	23.51	27.87	FN_WH-Cooling-CPUC-1
Single Family	Cooling	Whole-House Fan - Installation	household	New	46.37	20	\$737.07	15%	40%	\$1,837.25	28.58	36.47	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Single Family	Cooling	Thermostat - Connected	household	New	7.60	5	\$254.58	4%	56%	\$149.59	6.87	8.92	STAT_SMRT-Cooling-RTF-v1.3-1
Single Family	Space Heating	Thermostat - Connected	household	New	428.70	5	\$254.58	4%	56%	\$149.59	90.35	115.64	STAT_SMRT-Heating-RTF-v1.3-1
Single Family	Cooling	Connected Home Control System	household	New	32.93	5	\$485.43	1%	19%	\$173.05	9.93	12.88	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Space Heating	Connected Home Control System	household	New	664.54	5	\$485.43	1%	19%	\$173.05	46.68	59.75	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Interior Lighting	Connected Home Control System	household	New	11.77	5	\$485.43	1%	19%	\$173.05	8.90	13.27	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Exterior Lighting	Connected Home Control System	household	New	8.77	5	\$485.43	1%	19%	\$173.05	2.26	3.32	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Miscellaneous	Connected Home Control System	household	New	8.38	5	\$485.43	1%	19%	\$173.05	7.18	8.62	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Single Family	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	235.86	40	\$864.21	1%	10%	\$378.09	39.51	46.13	DHW_DWHR-Water Heating-7PLN-v3-1

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Single Family	Water Heating	Water Heater - Faucet Aerators	aerators	New	113.26	15	\$5.30	43%	50%	(\$196.39)	34.65	42.08	DHW_AER-Water Heating-7PLN-v4-1
Single Family	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	93.83	10	\$0.01	65%	75%	(\$383.75)	12.90	16.70	DHW_SHW-Water Heating-RTF-v3.1-5
Single Family	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	25.68	15	\$3.37	12%	75%	\$17.45	78.67	99.98	DHW_PINS-Water Heating-MIDATL-v3.0-1
Single Family	Water Heating	Water Heater - Desuperheater	household	New	1,439.20	20	\$1,175.39	0%	0%	\$95.62	7.15	8.25	DHW_DSH-Water Heating-RTF-v2.2-1
Single Family	Water Heating	Water Heater - Temperature Setback	household	New	80.55	2	\$5.13	51%	75%	\$35.67	3.98	5.29	DHW_STBK-Water Heating-ILTRM-v4.0-3
Single Family	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	53.00	10	\$16.82	16%	45%	\$51.91	21.85	28.29	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Single Family	Water Heating	Water Heater - Solar System	household	New	1,189.01	20	\$9,127.71	2%	30%	\$898.85	538.23	611.92	DHW_WHsm-Water Heating-7PLN-v1-3
Single Family	Water Heating	Circulation Pump - High Efficiency	household	New	330.42	12	\$72.03	1%	10%	\$39.72	50.74	59.82	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Space Heating	Circulation Pump - High Efficiency	household	New	-57.76	12	\$72.03	1%	10%	\$39.72	-5.05	-5.96	RCIRCPMP_UPG-AII-RTF-v1.2-3
Single Family	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	119.96	8	\$102.48	0%	5%	\$241.82	16.08	25.80	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Single Family	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	25.82	15	\$10.55	3%	50%	\$80.57	75.35	110.56	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Single Family	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	28.69	3	\$28.71	1%	30%	\$586.49	7.76	13.41	RLTG_EXT_PV-Exterior Lighting-AEG-1
Single Family	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.33	10	\$19.80	0%	50%	\$248.17	47.60	72.72	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Single Family	Appliances	Refrigerator - Decommissioning and Recycling	household	New	210.74	7	\$222.66	0%	65%	\$213.67	192.95	243.98	RFG_DEC-Appliances-RTF-v5.1-1

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Single Family	Appliances	Freezer - Decommissioning and Recycling	household	New	235.83	6	\$145.11	0%	10%	\$137.61	58.62	74.32	FRZ_DEC-Appliances-RTF-v5.1-1
Single Family	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	34.47	5	\$37.31	8%	25%	\$262.69	40.45	47.38	SMARTSTRIP-Electronics-RTF-v2.4-1
Single Family	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	66.08	5	\$50.76	8%	25%	\$186.44	77.54	90.82	SMARTSTRIP-Electronics-RTF-v2.4-4
Single Family	Miscellaneous	Pool Pump - Timer	household	New	838.36	10	\$19.59	1%	75%	\$3.73	22.55	28.34	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Single Family	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,319.71	20	\$3,900.44	0%	30%	\$337.34	0.68	0.77	PLHT_SOL-Miscellaneous-AEG-1
Single Family	Miscellaneous	Pool Cleaner - Robotic	household	New	1,386.73	5	\$835.50	0%	30%	\$153.69	9.65	12.26	PLPMP_ROBOT-Miscellaneous-PGE-1
Single Family	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	3.88	16	\$179.25	0%	30%	\$8,830.62	14.88	20.75	POOLSPALED-Exterior Lighting-SCE-R0-1
Single Family	Cooling	ENERGY STAR Home Design	household	New	134.22	45	\$6,198.54	14%	68%	\$554.53	416.58	486.59	ESTARH-Cooling-RTF-SFWAv3.1-8
Single Family	Space Heating	ENERGY STAR Home Design	household	New	722.50	45	\$6,198.54	14%	68%	\$554.53	2,280.68	2,647.98	ESTARH-Heating-RTF-SFWAv3.1-7
Single Family	Water Heating	ENERGY STAR Home Design	household	New	26.52	45	\$6,198.54	14%	68%	\$554.53	81.67	94.98	ESTARH-Water Heating-RTF-SFWAv3.1-3
Single Family	Interior Lighting	ENERGY STAR Home Design	household	New	353.00	45	\$6,198.54	14%	68%	\$554.53	631.25	791.87	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Single Family	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	431.68	20	\$15,574.39	2%	8%	\$187.08	102.45	119.71	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	5,303.33	20	\$15,574.39	2%	8%	\$187.08	1,280.17	1,486.79	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,494.55	20	\$15,574.39	2%	8%	\$187.08	352.03	409.44	RES_ADVNC_ZNE-AII-PGE-3

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Single Family	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	589.28	20	\$15,574.39	2%	8%	\$187.08	80.58	100.71	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	146.32	20	\$15,574.39	2%	8%	\$187.08	20.50	25.51	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,227.53	20	\$15,574.39	2%	8%	\$187.08	301.32	347.81	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	355.02	20	\$15,574.39	2%	8%	\$187.08	96.19	106.67	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	254.17	20	\$15,574.39	2%	8%	\$187.08	66.10	73.07	RES_ADVNC_ZNE-AII-PGE-3
Single Family	Cooling	Behavioral Programs	household	New	0.97	5	\$33.89	37%	37%	\$54.95	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Space Heating	Behavioral Programs	household	New	11.87	5	\$33.89	37%	37%	\$54.95	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Water Heating	Behavioral Programs	household	New	131.34	5	\$33.89	37%	37%	\$54.95	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Interior Lighting	Behavioral Programs	household	New	25.40	5	\$33.89	37%	37%	\$54.95	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$54.95	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$54.95	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$54.95	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Single Family	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$54.95	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.08	45	\$0.78	13%	38%	\$80.02	60.25	79.22	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	Existing	0.88	45	\$0.78	13%	38%	\$80.02	677.60	858.86	INS_CLG-Heating-RTF-MFv3.4-4

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Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.01	45	\$1.15	13%	38%	\$785.26	9.31	12.23	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	Existing	0.13	45	\$1.15	13%	38%	\$785.26	102.41	129.80	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	Existing	6.48	15	\$313.28	4%	19%	\$478.92	6.70	8.81	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	Existing	78.23	15	\$313.28	4%	19%	\$478.92	81.56	103.38	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.01	45	\$1.63	0%	4%	\$401.11	2.44	3.21	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	0.39	45	\$1.63	0%	4%	\$401.11	114.57	145.21	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.00	20	\$0.92	11%	11%	\$697.80	0.00	0.00	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.15	20	\$0.92	11%	11%	\$697.80	0.00	0.00	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.01	50	\$1.37	4%	4%	\$960.61	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.13	50	\$1.37	4%	4%	\$960.61	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	Existing	-0.01	45	\$1.04	7%	30%	\$918.98	-4.72	-6.21	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	Existing	0.12	45	\$1.04	7%	30%	\$918.98	88.63	112.34	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.00	45	\$0.92	7%	30%	\$247.80	-0.73	-0.96	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	Existing	0.37	45	\$0.92	7%	30%	\$247.80	276.96	351.04	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	Existing	0.00	70	\$0.95	7%	7%	\$759.18	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	Existing	0.12	70	\$0.95	7%	7%	\$759.18	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	0.00	70	\$0.95	7%	7%	\$759.18	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	Existing	0.12	70	\$0.95	7%	7%	\$759.18	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	Existing	3.88	18	\$528.00	2%	60%	\$9,999.00	6.62	9.22	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	Existing	0.00	18	\$528.00	2%	60%	\$9,999.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	20	\$322.87	23%	56%	\$302.90	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	Existing	122.79	20	\$322.87	23%	56%	\$302.90	68.18	88.24	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.03	10	\$0.55	8%	19%	\$374.10	8.28	11.28	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.21	10	\$0.55	8%	19%	\$374.10	34.76	44.45	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	12%	56%	\$1,309.36	4.51	5.93	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.08	15	\$0.78	12%	56%	\$1,309.36	366.48	464.51	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	15	\$0.66	4%	19%	\$632.39	0.87	1.14	INF_CTRL-Cooling-7PLN-SFv7-6
Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.13	15	\$0.66	4%	19%	\$632.39	127.51	161.62	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.02	15	\$0.67	4%	19%	\$339.23	13.06	16.13	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.23	15	\$0.67	4%	19%	\$339.23	160.77	193.73	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.11	45	\$21.76	24%	68%	\$972.90	34.33	45.14	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	2.10	45	\$21.76	24%	68%	\$972.90	631.49	800.41	WND_HE-Heating-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.51	3%	8%	\$462.00	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	2.59	20	\$10.51	3%	8%	\$462.00	86.62	109.79	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.27	10	\$3.73	25%	56%	\$2,226.25	58.15	76.45	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	Existing	22.93	15	\$958.59	8%	19%	\$413.92	16.40	21.23	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	Existing	276.96	15	\$958.59	8%	19%	\$413.92	200.51	251.71	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	74%	80%	\$616.58	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	Existing	2.98	45	\$18.64	74%	80%	\$616.58	28.26	35.82	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	Existing	18.30	30	\$59.05	74%	80%	\$351.60	7.87	9.80	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	74%	80%	\$351.60	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	17.84	15	\$4,269.72	0%	75%	\$1,223.66	46.97	59.48	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	400.90	15	\$4,269.72	0%	75%	\$1,223.66	1,570.76	1,982.03	DHP-Heating-RTF-SFv4.1-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	28.12	15	\$4,269.72	0%	45%	\$1,060.12	35.21	47.90	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	466.23	15	\$4,269.72	0%	45%	\$1,060.12	305.24	385.64	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	176.58	20	\$1,348.08	0%	0%	\$868.15	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	486.87	15	\$3,379.23	0%	23%	\$790.43	164.46	209.97	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	Existing	97.91	2	\$80.50	1%	75%	\$449.23	99.99	120.47	FURN_MNT-Heating-AEG-2

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Multifamily	Cooling	Room AC - Removal of Second Unit	household	Existing	159.32	3	\$18.46	0%	50%	\$44.83	280.68	355.42	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	12.56	6	\$285.43	1%	75%	\$5,431.84	26.12	33.03	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.13	15	\$601.89	65%	75%	\$893.19	0.00	0.00	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	89.61	15	\$601.89	65%	75%	\$893.19	1.63	2.11	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	58.71	15	\$4,104.00	0%	20%	\$338.97	7.60	9.21	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	466.91	15	\$4,104.00	0%	20%	\$338.97	67.29	78.77	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,121.88	15	\$4,104.00	0%	20%	\$338.97	148.96	177.14	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.85	10	\$48.72	40%	75%	\$734.27	50.70	62.06	FN_WH-Cooling-CPUC-1
Multifamily	Cooling	Whole-House Fan - Installation	household	Existing	10.09	20	\$737.07	2%	10%	\$8,552.33	5.97	7.85	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	Existing	1.65	5	\$254.58	4%	38%	\$794.74	3.83	4.96	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	Existing	79.80	5	\$254.58	4%	38%	\$794.74	187.21	235.01	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	Existing	7.71	5	\$485.43	1%	13%	\$734.48	5.95	7.71	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	Existing	152.93	5	\$485.43	1%	13%	\$734.48	119.59	150.12	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

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Multifamily	Interior Lighting	Connected Home Control System	household	Existing	5.02	5	\$485.43	1%	13%	\$734.48	11.64	18.04	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	Existing	3.79	5	\$485.43	1%	13%	\$734.48	3.01	4.64	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	Existing	2.31	5	\$485.43	1%	13%	\$734.48	4.30	5.80	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	129.92	40	\$864.21	1%	5%	\$713.07	29.55	35.87	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	53.35	15	\$5.30	13%	50%	(\$433.07)	233.18	294.64	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	90.21	10	\$0.01	19%	75%	(\$292.69)	392.42	531.99	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	24.69	15	\$3.37	12%	75%	\$18.86	463.12	627.83	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	Existing	875.39	20	\$1,175.39	0%	0%	\$163.32	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Multifamily	Water Heating	Water Heater - Temperature Setback	household	Existing	77.44	2	\$5.13	41%	75%	\$38.55	158.87	215.37	DHW_STBK-Water Heating-ILTRM-v4.0-3
Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	50.95	10	\$16.82	16%	45%	\$56.09	116.47	157.90	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	Existing	654.94	20	\$9,127.71	2%	30%	\$1,695.21	533.54	628.07	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	Existing	182.00	12	\$72.03	0%	28%	\$65.70	295.40	358.55	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	Existing	-10.75	12	\$72.03	0%	28%	\$65.70	-20.27	-23.95	RCIRCMPM_UPG-All-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	120.17	8	\$102.48	0%	10%	\$258.96	81.13	142.97	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

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Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	25.89	15	\$10.55	1%	50%	\$85.28	89.81	154.79	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	38.35	3	\$28.71	1%	30%	\$465.55	39.50	68.07	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	19.38	10	\$19.80	1%	50%	\$262.66	67.67	116.63	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	205.87	7	\$222.66	0%	65%	\$227.15	136.02	177.92	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	Existing	231.95	6	\$145.11	0%	10%	\$143.01	69.54	89.58	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.26	5	\$37.31	8%	25%	\$253.98	179.59	212.36	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	73.33	5	\$50.76	8%	25%	\$180.26	344.27	407.07	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	Existing	824.54	10	\$19.59	0%	75%	\$3.86	31.41	40.36	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,366.27	20	\$3,900.44	0%	30%	\$332.50	7.47	8.74	PLHT_SOL-Miscellaneous-AEG-1
Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,435.67	5	\$835.50	0%	30%	\$151.48	21.88	28.11	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.72	16	\$179.25	0%	30%	\$9,999.00	18.19	28.08	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3

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Multifamily	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	79.41	20	\$7,727.88	0%	0%	\$276.08	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	904.55	20	\$7,727.88	0%	0%	\$276.08	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	824.10	20	\$7,727.88	0%	0%	\$276.08	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	289.85	20	\$7,727.88	0%	0%	\$276.08	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	72.87	20	\$7,727.88	0%	0%	\$276.08	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	856.84	20	\$7,727.88	0%	0%	\$276.08	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	334.63	20	\$7,727.88	0%	0%	\$276.08	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	49.79	20	\$7,727.88	0%	0%	\$276.08	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Cooling	Behavioral Programs	household	Existing	0.18	5	\$33.89	37%	37%	\$112.22	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	Existing	2.23	5	\$33.89	37%	37%	\$112.22	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	Existing	72.35	5	\$33.89	37%	37%	\$112.22	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	Existing	11.11	5	\$33.89	37%	37%	\$112.22	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

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Multifamily	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$112.22	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$112.22	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$112.22	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$112.22	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Cooling	Insulation - Ceiling Installation	sqft roof - mf	New	0.07	45	\$0.78	9%	38%	\$80.88	5.42	6.79	INS_CLG-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Ceiling Installation	sqft roof - mf	New	0.88	45	\$0.78	9%	38%	\$80.88	67.07	84.33	INS_CLG-Heating-RTF-MFv3.4-4
Multifamily	Cooling	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.01	45	\$1.15	9%	38%	\$860.68	0.84	1.05	INS_CLG-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Ceiling Upgrade	sqft roof - mf	New	0.12	45	\$1.15	9%	38%	\$860.68	9.29	11.68	INS_CLG-Heating-RTF-SFv3.7-10
Multifamily	Cooling	Insulation - Radiant Barrier	household	New	5.20	15	\$313.28	1%	5%	\$641.89	0.11	0.14	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Space Heating	Insulation - Radiant Barrier	household	New	58.24	15	\$313.28	1%	5%	\$641.89	1.22	1.54	INS_RB-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.01	45	\$1.63	0%	0%	\$438.85	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	0.36	45	\$1.63	0%	0%	\$438.85	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.00	20	\$0.92	11%	15%	\$940.59	0.07	0.09	AEG-BEST
Multifamily	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.11	20	\$0.92	11%	15%	\$940.59	2.42	3.04	AEG-BEST
Multifamily	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.01	50	\$1.37	4%	5%	\$1,287.49	0.07	0.08	INS_WLS_SIDING-HVAC-E3T-287-1
Multifamily	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.10	50	\$1.37	4%	5%	\$1,287.49	0.72	0.90	INS_WLS_SIDING-HVAC-E3T-287-1

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Multifamily	Cooling	Insulation - Floor Installation	sqft floor cs - mf	New	-0.01	45	\$1.04	15%	38%	\$1,003.24	-0.34	-0.42	INS_FLR-Cooling-RTF-SFv3.7-7
Multifamily	Space Heating	Insulation - Floor Installation	sqft floor cs - mf	New	0.11	45	\$1.04	15%	38%	\$1,003.24	6.37	8.01	INS_FLR-Heating-RTF-SFv3.7-7
Multifamily	Cooling	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.00	45	\$0.92	15%	38%	\$248.19	-0.05	-0.07	INS_FLR-Cooling-RTF-SFv3.7-10
Multifamily	Space Heating	Insulation - Floor Upgrade	sqft floor cs - mf	New	0.37	45	\$0.92	15%	38%	\$248.19	21.73	27.33	INS_FLR-Heating-RTF-MFv3.4-16
Multifamily	Cooling	Insulation - Foundation	sqft floor cs - mf	New	0.00	70	\$0.95	33%	56%	\$829.28	-0.24	-0.30	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Foundation	sqft floor cs - mf	New	0.11	70	\$0.95	33%	56%	\$829.28	7.17	9.01	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	0.00	70	\$0.95	43%	19%	\$829.28	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Multifamily	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs - mf	New	0.11	70	\$0.95	43%	19%	\$829.28	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Multifamily	Cooling	Insulation - Ducting	household	New	2.87	18	\$528.00	14%	80%	\$9,999.00	0.51	0.66	AEG-BEST
Multifamily	Space Heating	Insulation - Ducting	household	New	0.00	18	\$528.00	14%	80%	\$9,999.00	0.00	0.00	AEG-BEST
Multifamily	Cooling	Ducting - Repair and Sealing	household	New	0.00	20	\$322.87	23%	56%	\$255.62	0.00	0.00	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Space Heating	Ducting - Repair and Sealing	household	New	144.85	20	\$322.87	23%	56%	\$255.62	6.67	8.44	DCT_RPR-Heating-RTF-SFv4.2-1
Multifamily	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.02	10	\$0.55	8%	19%	\$378.92	0.64	0.83	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.21	10	\$0.55	8%	19%	\$378.92	3.15	3.99	DCT_RPR_AERO-HVAC-E3T-178-1
Multifamily	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.00	15	\$0.78	12%	56%	\$488.09	0.11	0.13	INF_CTRL-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.20	15	\$0.78	12%	56%	\$488.09	8.65	10.91	INF_CTRL-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	15	\$0.66	4%	19%	\$691.61	0.06	0.08	INF_CTRL-Cooling-7PLN-SFv7-6

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Multifamily	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.12	15	\$0.66	4%	19%	\$691.61	9.44	11.91	INF_CTRL-Heating-7PLN-SFv7-2
Multifamily	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.02	15	\$0.67	4%	19%	\$454.66	1.35	1.60	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.17	15	\$0.67	4%	19%	\$454.66	14.63	17.38	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Multifamily	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.16	45	\$21.76	33%	68%	\$1,031.95	3.33	4.17	WND_HE-Cooling-RTF-SFv3.7-1
Multifamily	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	1.93	45	\$21.76	33%	68%	\$1,031.95	37.21	46.79	WND_HE-Heating-RTF-SFv3.7-1
Multifamily	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.51	4%	8%	\$505.17	0.00	0.00	n/a
Multifamily	Space Heating	Windows - Low-e Storm Addition	sqft window	New	2.38	20	\$10.51	4%	8%	\$505.17	5.10	6.42	WND_LOWE-Heating-RTF-MFv3.4-10
Multifamily	Cooling	Windows - Install Reflective Film	sqft window	New	0.24	10	\$3.73	40%	56%	\$2,507.20	1.83	2.34	WND_FLM-HVAC-CMUATRM-2016-12
Multifamily	Cooling	Windows - Cellular Shades	household	New	18.40	15	\$958.59	13%	19%	\$554.77	0.74	0.93	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Space Heating	Windows - Cellular Shades	household	New	206.20	15	\$958.59	13%	19%	\$554.77	7.97	9.98	WND_CELLSHD-HVAC-E3T-474-1
Multifamily	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	80%	80%	\$617.73	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Space Heating	Doors - Storm and Thermal	sqft door	New	3.00	45	\$18.64	80%	80%	\$617.73	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Multifamily	Cooling	HVAC - Plant Shade Trees	household	New	15.80	30	\$59.05	80%	80%	\$395.97	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	80%	80%	\$395.97	0.00	0.00	SHADETREE-Cooling-AEG-1
Multifamily	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	15.14	15	\$4,269.72	3%	38%	\$1,810.17	1.83	2.29	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	272.67	15	\$4,269.72	3%	38%	\$1,810.17	49.89	62.26	DHP-Heating-RTF-SFv4.1-1

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Multifamily	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	21.71	15	\$4,031.10	3%	38%	\$1,005.47	2.29	2.96	DHP-Cooling-RTF-SFv4.1-1
Multifamily	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	469.15	15	\$4,031.10	3%	38%	\$1,005.47	23.57	29.45	DHP-Heating-RTF-v1.6-1
Multifamily	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	162.53	20	\$1,348.08	0%	15%	\$949.27	26.15	30.50	RES_HRV-Heating-7PLN-v1-2
Multifamily	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	489.92	15	\$3,379.23	0%	0%	\$785.51	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Multifamily	Space Heating	Furnace - Maintenance	household	New	98.52	2	\$80.50	1%	75%	\$446.43	0.89	1.15	FURN_MNT-Heating-AEG-2
Multifamily	Cooling	Room AC - Removal of Second Unit	household	New	135.26	3	\$18.46	0%	50%	\$52.61	8.50	10.87	RAC_RMV-Cooling-DEER-1
Multifamily	Cooling	Central AC - Maintenance and Tune-Up	household	New	9.70	6	\$285.43	45%	75%	\$6,761.07	0.60	0.74	CAC_MNT-Cooling-ILTRM-v4.0-1
Multifamily	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.13	15	\$601.89	25%	75%	\$902.13	0.00	0.00	ASHP_MNT-Cooling-RTF-SFv3.4-1
Multifamily	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	86.55	15	\$601.89	25%	75%	\$902.13	0.84	1.04	ASHP_MNT-Heating-RTF-SFv3.4-1
Multifamily	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	46.05	15	\$4,104.00	5%	20%	\$346.21	1.52	1.78	RES_ASIHP-Cooling-AEG-NEEA-1
Multifamily	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	468.68	15	\$4,104.00	5%	20%	\$346.21	16.21	18.69	RES_ASIHP-Heating-AEG-NEEA-1
Multifamily	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,052.13	15	\$4,104.00	5%	20%	\$346.21	35.53	40.98	RES_ASIHP-Water Heating-AEG-NEEA-1
Multifamily	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.08	10	\$48.72	40%	75%	\$699.27	5.38	6.33	FN_WH-Cooling-CPUC-1

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Multifamily	Cooling	Whole-House Fan - Installation	household	New	8.71	20	\$737.07	2%	10%	\$9,631.62	0.45	0.56	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Multifamily	Cooling	Thermostat - Connected	household	New	1.43	5	\$254.58	4%	38%	\$869.50	0.20	0.26	STAT_SMRT-Cooling-RTF-v1.3-1
Multifamily	Space Heating	Thermostat - Connected	household	New	73.45	5	\$254.58	4%	38%	\$869.50	9.91	12.65	STAT_SMRT-Heating-RTF-v1.3-1
Multifamily	Cooling	Connected Home Control System	household	New	6.18	5	\$485.43	1%	13%	\$966.63	0.29	0.37	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Space Heating	Connected Home Control System	household	New	113.86	5	\$485.43	1%	13%	\$966.63	5.12	6.54	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Interior Lighting	Connected Home Control System	household	New	5.82	5	\$485.43	1%	13%	\$966.63	0.81	1.20	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Exterior Lighting	Connected Home Control System	household	New	4.36	5	\$485.43	1%	13%	\$966.63	0.21	0.31	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Miscellaneous	Connected Home Control System	household	New	2.18	5	\$485.43	1%	13%	\$966.63	0.25	0.32	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Multifamily	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	135.27	40	\$864.21	1%	10%	\$658.94	11.95	13.96	DHW_DWHR-Water Heating-7PLN-v3-1
Multifamily	Water Heating	Water Heater - Faucet Aerators	aerators	New	55.49	15	\$5.30	9%	50%	(\$400.62)	37.42	45.47	DHW_AER-Water Heating-7PLN-v4-1
Multifamily	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	93.83	10	\$0.01	14%	75%	(\$270.76)	31.19	40.40	DHW_SHW-Water Heating-RTF-v3.1-5
Multifamily	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	25.68	15	\$3.37	12%	75%	\$17.44	42.10	53.54	DHW_PINS-Water Heating-MIDATL-v3.0-1
Multifamily	Water Heating	Water Heater - Desuperheater	household	New	825.42	20	\$1,175.39	0%	0%	\$166.66	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Multifamily	Water Heating	Water Heater - Temperature Setback	household	New	80.55	2	\$5.13	51%	75%	\$35.66	2.13	2.84	DHW_STBK-Water Heating-ILTRM-v4.0-3

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Multifamily	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	52.99	10	\$16.82	16%	45%	\$51.89	8.46	10.96	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Multifamily	Water Heating	Water Heater - Solar System	household	New	681.92	20	\$9,127.71	2%	30%	\$1,566.53	161.64	183.80	DHW_WHsm-Water Heating-7PLN-v1-3
Multifamily	Water Heating	Circulation Pump - High Efficiency	household	New	189.50	12	\$72.03	1%	10%	\$60.08	15.34	18.09	RCIRCPMP_UPG-AII-RTF-v1.2-3
Multifamily	Space Heating	Circulation Pump - High Efficiency	household	New	-9.90	12	\$72.03	1%	10%	\$60.08	-0.86	-1.01	RCIRCPMP_UPG-AII-RTF-v1.2-3
Multifamily	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	120.82	8	\$102.48	2%	10%	\$258.14	3.93	6.32	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Multifamily	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	25.85	15	\$10.55	0%	50%	\$84.22	7.82	11.61	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Multifamily	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	28.72	3	\$28.71	1%	30%	\$613.05	0.76	1.36	RLTG_EXT_PV-Exterior Lighting-AEG-1
Multifamily	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.35	10	\$19.80	0%	50%	\$259.41	4.68	7.24	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Multifamily	Appliances	Refrigerator - Decommissioning and Recycling	household	New	210.74	7	\$222.66	0%	65%	\$213.67	11.12	14.06	RFG_DEC-Appliances-RTF-v5.1-1
Multifamily	Appliances	Freezer - Decommissioning and Recycling	household	New	235.83	6	\$145.11	0%	10%	\$137.61	4.91	6.23	FRZ_DEC-Appliances-RTF-v5.1-1
Multifamily	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	34.48	5	\$37.31	8%	25%	\$262.63	12.41	14.54	SMARTSTRIP-Electronics-RTF-v2.4-1
Multifamily	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	66.10	5	\$50.76	8%	25%	\$186.40	23.79	27.87	SMARTSTRIP-Electronics-RTF-v2.4-4
Multifamily	Miscellaneous	Pool Pump - Timer	household	New	838.36	10	\$19.59	0%	75%	\$3.73	3.01	3.78	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Multifamily	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,319.71	20	\$3,900.44	0%	30%	\$337.34	2.44	2.78	PLHT_SOL-Miscellaneous-AEG-1

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Multifamily	Miscellaneous	Pool Cleaner - Robotic	household	New	1,386.73	5	\$835.50	0%	30%	\$153.69	1.28	1.63	PLPMP_ROBOT-Miscellaneous-PGE-1
Multifamily	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	1.93	16	\$179.25	0%	30%	\$9,999.00	2.17	3.04	POOLSPALED-Exterior Lighting-SCE-R0-1
Multifamily	Cooling	ENERGY STAR Home Design	household	New	1.62	45	\$6,198.54	14%	68%	\$9,999.00	1.56	1.80	ESTARH-Cooling-RTF-SFWAv3.1-8
Multifamily	Space Heating	ENERGY STAR Home Design	household	New	18.17	45	\$6,198.54	14%	68%	\$9,999.00	17.33	20.10	ESTARH-Heating-RTF-SFWAv3.1-7
Multifamily	Water Heating	ENERGY STAR Home Design	household	New	17.14	45	\$6,198.54	14%	68%	\$9,999.00	15.89	18.49	ESTARH-Water Heating-RTF-SFWAv3.1-3
Multifamily	Interior Lighting	ENERGY STAR Home Design	household	New	5.83	45	\$6,198.54	14%	68%	\$9,999.00	2.91	3.64	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Multifamily	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	81.08	20	\$7,727.88	2%	8%	\$263.56	5.97	6.90	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	908.65	20	\$7,727.88	2%	8%	\$263.56	66.26	76.86	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	857.16	20	\$7,727.88	2%	8%	\$263.56	60.73	70.68	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	291.40	20	\$7,727.88	2%	8%	\$263.56	11.13	13.83	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	72.76	20	\$7,727.88	2%	8%	\$263.56	2.90	3.62	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	872.82	20	\$7,727.88	2%	8%	\$263.56	65.12	74.89	RES_ADVNC_ZNE-AII-PGE-3
Multifamily	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	355.10	20	\$7,727.88	2%	8%	\$263.56	28.93	32.09	RES_ADVNC_ZNE-AII-PGE-3

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Multifamily	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	49.45	20	\$7,727.88	2%	8%	\$263.56	3.45	4.02	RES_ADVNC_ZNE-All-PGE-3
Multifamily	Cooling	Behavioral Programs	household	New	0.18	5	\$33.89	37%	37%	\$103.82	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Space Heating	Behavioral Programs	household	New	2.03	5	\$33.89	37%	37%	\$103.82	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Water Heating	Behavioral Programs	household	New	75.33	5	\$33.89	37%	37%	\$103.82	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Interior Lighting	Behavioral Programs	household	New	12.56	5	\$33.89	37%	37%	\$103.82	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$103.82	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$103.82	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$103.82	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Multifamily	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$103.82	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	Existing	0.11	45	\$0.78	10%	38%	\$61.32	337.16	448.56	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	Existing	1.16	45	\$0.78	10%	38%	\$61.32	637.98	820.49	INS_CLG-Heating-RTF-MFv3.4-4
Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	Existing	0.02	25	\$1.03	10%	38%	\$370.21	52.07	69.28	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	Existing	0.30	25	\$1.03	10%	38%	\$370.21	163.60	210.40	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	Existing	27.42	15	\$978.30	4%	19%	\$367.05	32.48	43.21	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	Existing	320.96	15	\$978.30	4%	19%	\$367.05	66.52	85.55	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	Existing	0.03	45	\$1.63	0%	4%	\$106.93	11.82	15.73	INS_WLC-Cooling-RTF-SFv3.7-1

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Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	Existing	1.49	45	\$1.63	0%	4%	\$106.93	93.44	120.17	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	Existing	0.01	20	\$0.92	11%	11%	\$186.04	0.00	0.00	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	Existing	0.55	20	\$0.92	11%	11%	\$186.04	0.00	0.00	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.04	50	\$1.37	4%	4%	\$255.62	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	Existing	0.49	50	\$1.37	4%	4%	\$255.62	0.00	0.00	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	Existing	-0.02	45	\$1.04	18%	30%	\$353.66	-11.45	-15.23	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	Existing	0.31	45	\$1.04	18%	30%	\$353.66	36.14	46.48	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	Existing	0.00	25	\$1.37	18%	30%	\$792.43	-1.77	-2.36	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	Existing	0.20	25	\$1.37	18%	30%	\$792.43	22.90	29.45	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$291.96	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	Existing	0.33	70	\$0.95	0%	0%	\$291.96	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	-0.01	70	\$0.95	0%	0%	\$291.96	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	Existing	0.33	70	\$0.95	0%	0%	\$291.96	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	Existing	53.65	18	\$528.00	48%	60%	\$115.75	16.89	23.50	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	Existing	497.16	18	\$528.00	48%	60%	\$115.75	46.09	59.44	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	Existing	0.00	18	\$442.54	22%	56%	\$63.01	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Space Heating	Ducting - Repair and Sealing	household	Existing	843.17	18	\$442.54	22%	56%	\$63.01	222.75	287.27	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.09	10	\$0.55	7%	19%	\$109.22	39.11	53.21	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	Existing	0.72	10	\$0.55	7%	19%	\$109.22	88.60	112.94	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.00	15	\$0.78	12%	56%	\$431.35	21.86	29.08	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	Existing	0.23	15	\$0.78	12%	56%	\$431.35	253.36	325.85	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.00	25	\$0.78	4%	19%	\$438.35	4.22	5.62	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	Existing	0.20	25	\$0.78	4%	19%	\$438.35	58.11	74.74	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.08	15	\$0.67	4%	19%	\$90.27	64.92	80.73	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	Existing	0.89	15	\$0.67	4%	19%	\$90.27	129.11	157.35	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	0.30	45	\$21.76	7%	68%	\$383.58	228.17	303.56	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	Existing	5.36	45	\$21.76	7%	68%	\$383.58	706.09	908.10	WND_HE-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	Existing	0.00	20	\$10.42	1%	8%	\$197.45	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	Existing	6.06	20	\$10.42	1%	8%	\$197.45	88.77	114.16	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	Existing	0.72	10	\$3.73	12%	56%	\$851.28	401.86	534.65	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	Existing	97.07	15	\$1,538.71	4%	19%	\$163.07	114.34	149.64	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	Existing	1,136.31	15	\$1,538.71	4%	19%	\$163.07	231.86	294.83	WND_CELLSHD-HVAC-E3T-474-1

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Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	Existing	0.00	45	\$18.64	3%	80%	\$151.69	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	Existing	12.24	45	\$18.64	3%	80%	\$151.69	275.29	354.05	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	Existing	77.47	30	\$59.05	3%	80%	\$83.76	467.20	586.49	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	Existing	0.00	30	\$59.05	3%	80%	\$83.76	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	Existing	81.20	15	\$4,269.72	0%	75%	\$329.06	133.73	169.34	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	Existing	1,475.98	15	\$4,269.72	0%	75%	\$329.06	682.10	860.69	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	145.81	15	\$4,269.72	0%	45%	\$201.50	169.59	230.62	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	Existing	2,454.97	15	\$4,269.72	0%	45%	\$201.50	755.81	954.90	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	Existing	724.48	20	\$1,348.08	0%	0%	\$213.59	0.00	0.00	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	Existing	2,563.66	15	\$3,379.23	0%	23%	\$162.77	404.85	516.88	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	Existing	515.54	2	\$80.50	7%	75%	\$85.31	227.74	274.38	FURN_MNT-Heating-AEG-2
Mobile Home	Cooling	Room AC - Removal of Second Unit	household	Existing	725.30	3	\$18.46	0%	50%	\$9.85	796.35	1,008.38	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	Existing	65.14	6	\$285.43	7%	75%	\$1,048.22	115.72	146.28	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	Existing	0.70	15	\$601.89	65%	75%	\$141.43	0.01	0.01	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	Existing	561.74	15	\$601.89	65%	75%	\$141.43	4.83	6.21	ASHP_MNT-Heating-RTF-SFv3.4-1

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Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	304.55	15	\$6,408.00	0%	20%	\$180.53	18.38	22.25	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	2,501.22	15	\$6,408.00	0%	20%	\$180.53	168.83	197.16	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	Existing	1,956.97	15	\$6,408.00	0%	20%	\$180.53	121.04	143.90	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	Existing	10.80	10	\$48.72	40%	75%	\$743.80	59.37	73.10	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	Existing	42.70	20	\$737.07	15%	40%	\$2,037.30	85.16	113.30	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	Existing	7.00	5	\$254.58	4%	56%	\$195.40	29.14	38.14	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	Existing	327.42	5	\$254.58	4%	56%	\$195.40	236.19	300.33	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	Existing	32.63	5	\$485.43	1%	19%	\$185.83	45.29	59.28	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	Existing	627.45	5	\$485.43	1%	19%	\$185.83	150.88	191.85	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Interior Lighting	Connected Home Control System	household	Existing	6.02	5	\$485.43	1%	19%	\$185.83	17.35	26.64	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	Existing	3.18	5	\$485.43	1%	19%	\$185.83	3.20	4.88	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	Existing	5.42	5	\$485.43	1%	19%	\$185.83	15.94	21.92	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	Existing	226.62	40	\$864.21	1%	5%	\$409.01	32.75	39.75	DHW_DWHR-Water Heating-7PLN-v3-1

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Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	Existing	100.42	15	\$5.30	28%	50%	(\$211.88)	247.21	312.43	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	Existing	90.16	10	\$0.01	42%	75%	(\$383.08)	147.28	199.74	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	Existing	24.68	15	\$3.37	12%	75%	\$18.88	294.05	398.78	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	Existing	1,527.00	20	\$1,175.39	0%	0%	\$93.68	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-7
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	Existing	77.40	2	\$5.13	41%	75%	\$38.59	100.87	136.80	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	Existing	50.92	10	\$16.82	16%	45%	\$56.16	73.95	100.29	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	Existing	1,142.46	20	\$9,127.71	1%	30%	\$972.36	611.91	720.43	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	Existing	317.48	12	\$72.03	0%	17%	\$41.40	193.50	234.89	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	Existing	-44.12	12	\$72.03	0%	17%	\$41.40	-9.56	-11.39	RCIRCPMP_UPG-AII-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	Existing	119.90	8	\$102.48	0%	10%	\$251.92	65.67	113.74	RLTG_OS-Interior Lighting-PGE-Rev. 3-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	Existing	25.87	15	\$10.55	7%	50%	\$81.61	128.54	216.21	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	Existing	38.32	3	\$28.71	1%	30%	\$445.52	64.32	108.18	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	Existing	19.36	10	\$19.80	0%	50%	\$251.36	111.24	187.11	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	Existing	201.48	7	\$222.66	0%	65%	\$242.93	291.96	398.34	RFG_DEC-Appliances-RTF-v5.1-1

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Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	Existing	231.95	6	\$145.11	0%	10%	\$143.01	188.70	243.09	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	Existing	38.25	5	\$37.31	8%	25%	\$254.03	138.12	163.32	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	Existing	73.32	5	\$50.76	8%	25%	\$180.30	264.77	313.07	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	Existing	824.54	10	\$19.59	0%	75%	\$3.86	32.30	41.50	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	Existing	1,366.27	20	\$3,900.44	0%	30%	\$332.50	2.09	2.44	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	Existing	1,435.67	5	\$835.50	0%	30%	\$151.48	22.50	28.90	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	Existing	1.44	16	\$179.25	0%	30%	\$9,999.00	12.45	18.96	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Water Heating-RTF-SFWAv3.1-3
Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	Existing	0.00	45	\$6,198.54	0%	0%	\$0.00	0.00	0.00	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	Existing	351.88	20	\$12,066.34	0%	0%	\$185.24	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	3,939.41	20	\$12,066.34	0%	0%	\$185.24	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	Existing	1,436.15	20	\$12,066.34	0%	0%	\$185.24	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3

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Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	307.42	20	\$12,066.34	0%	0%	\$185.24	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	Existing	54.15	20	\$12,066.34	0%	0%	\$185.24	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	Existing	1,156.63	20	\$12,066.34	0%	0%	\$185.24	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	Existing	334.63	20	\$12,066.34	0%	0%	\$185.24	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	Existing	158.25	20	\$12,066.34	0%	0%	\$185.24	0.00	0.00	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	Existing	0.78	5	\$33.89	37%	37%	\$63.32	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	Existing	9.15	5	\$33.89	37%	37%	\$63.32	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	Existing	126.20	5	\$33.89	37%	37%	\$63.32	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	Existing	13.32	5	\$33.89	37%	37%	\$63.32	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Exterior Lighting	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$63.32	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$63.32	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$63.32	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	Existing	0.00	5	\$33.89	37%	37%	\$63.32	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Cooling	Insulation - Ceiling Installation	sqft roof	New	0.10	45	\$0.78	28%	38%	\$57.74	8.66	11.04	INS_CLG-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Ceiling Installation	sqft roof	New	1.24	45	\$0.78	28%	38%	\$57.74	18.57	23.34	INS_CLG-Heating-RTF-MFv3.4-4

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Mobile Home	Cooling	Insulation - Ceiling Upgrade	sqft roof	New	0.01	25	\$1.03	28%	38%	\$367.44	1.34	1.70	INS_CLG-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Ceiling Upgrade	sqft roof	New	0.30	25	\$1.03	28%	38%	\$367.44	4.49	5.64	INS_CLG-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Radiant Barrier	household	New	23.06	15	\$978.30	1%	5%	\$458.22	0.58	0.74	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Space Heating	Insulation - Radiant Barrier	household	New	254.60	15	\$978.30	1%	5%	\$458.22	1.08	1.36	INS_RB-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Insulation - Wall Cavity Installation	sqft wall	New	0.03	45	\$1.63	0%	0%	\$108.77	0.00	0.00	INS_WLC-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Insulation - Wall Cavity Installation	sqft wall	New	1.46	45	\$1.63	0%	0%	\$108.77	0.00	0.00	INS_WLC-Heating-RTF-SFv3.7-1
Mobile Home	Cooling	Insulation - Wall Sheathing	sqft wall	New	0.01	20	\$0.92	11%	15%	\$233.24	0.34	0.43	AEG-BEST
Mobile Home	Space Heating	Insulation - Wall Sheathing	sqft wall	New	0.44	20	\$0.92	11%	15%	\$233.24	2.14	2.68	AEG-BEST
Mobile Home	Cooling	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.04	50	\$1.37	4%	5%	\$319.11	0.34	0.43	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Space Heating	Insulation - External Wall Sheathing - Insulated Vinyl Siding	sqft wall	New	0.39	50	\$1.37	4%	5%	\$319.11	0.63	0.79	INS_WLS_SIDING-HVAC-E3T-287-1
Mobile Home	Cooling	Insulation - Floor Installation	sqft floor cs	New	-0.02	45	\$1.04	33%	38%	\$358.09	-0.33	-0.42	INS_FLR-Cooling-RTF-SFv3.7-7
Mobile Home	Space Heating	Insulation - Floor Installation	sqft floor cs	New	0.30	45	\$1.04	33%	38%	\$358.09	1.07	1.35	INS_FLR-Heating-RTF-SFv3.7-7
Mobile Home	Cooling	Insulation - Floor Upgrade	sqft floor cs	New	0.00	25	\$1.37	33%	38%	\$782.15	-0.05	-0.06	INS_FLR-Cooling-RTF-SFv3.7-10
Mobile Home	Space Heating	Insulation - Floor Upgrade	sqft floor cs	New	0.20	25	\$1.37	33%	38%	\$782.15	0.70	0.88	INS_FLR-Heating-RTF-MHv4.4-4
Mobile Home	Cooling	Insulation - Foundation	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$296.00	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Foundation	sqft floor cs	New	0.32	70	\$0.95	0%	0%	\$296.00	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1

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Mobile Home	Cooling	Insulation - Insulated Concrete Forms	sqft floor cs	New	-0.01	70	\$0.95	0%	0%	\$296.00	0.00	0.00	INS_FND_B-Cooling-RTF-v3.1-1
Mobile Home	Space Heating	Insulation - Insulated Concrete Forms	sqft floor cs	New	0.32	70	\$0.95	0%	0%	\$296.00	0.00	0.00	INS_FND_B-Heating-RTF-v3.1-1
Mobile Home	Cooling	Insulation - Ducting	household	New	45.77	18	\$528.00	48%	80%	\$106.65	3.48	4.55	AEG-BEST
Mobile Home	Space Heating	Insulation - Ducting	household	New	545.37	18	\$528.00	48%	80%	\$106.65	11.27	14.13	AEG-BEST
Mobile Home	Cooling	Ducting - Repair and Sealing	household	New	0.00	18	\$442.54	22%	56%	\$61.92	0.00	0.00	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Space Heating	Ducting - Repair and Sealing	household	New	851.28	18	\$442.54	22%	56%	\$61.92	19.25	24.12	DCT_RPR-Heating-RTF-MHv2.1-1
Mobile Home	Cooling	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.07	10	\$0.55	7%	19%	\$134.53	3.15	4.13	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Space Heating	Ducting - Repair and Sealing - Aerosol	sqft home	New	0.58	10	\$0.55	7%	19%	\$134.53	6.62	8.32	DCT_RPR_AERO-HVAC-E3T-178-1
Mobile Home	Cooling	Building Shell - Infiltration Control	cfm50 reduction	New	0.01	15	\$0.78	12%	56%	\$413.94	0.54	0.69	INF_CTRL-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Building Shell - Infiltration Control	cfm50 reduction	New	0.23	15	\$0.78	12%	56%	\$413.94	1.99	2.51	INF_CTRL-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.00	25	\$0.78	4%	19%	\$433.61	0.33	0.43	INF_CTRL-Cooling-7PLN-SFv7-6
Mobile Home	Space Heating	Building Shell - Whole-Home Aerosol Sealing	sqft home	New	0.20	25	\$0.78	4%	19%	\$433.61	4.90	6.17	INF_CTRL-Heating-7PLN-v4-2
Mobile Home	Cooling	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.06	15	\$0.67	4%	19%	\$112.69	7.09	8.48	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Space Heating	Building Shell - Liquid-Applied Weather-Resistive Barrier	sqft wall	New	0.71	15	\$0.67	4%	19%	\$112.69	12.62	15.01	INF_CTRL_LIQ-WRB-HVAC-E3T-570-1
Mobile Home	Cooling	Windows - High Efficiency/ENERGY STAR	sqft window	New	0.45	25	\$21.76	50%	68%	\$426.51	8.72	11.11	WND_HE-Cooling-RTF-SFv3.7-1
Mobile Home	Space Heating	Windows - High Efficiency/ENERGY STAR	sqft window	New	5.25	25	\$21.76	50%	68%	\$426.51	16.89	21.23	WND_HE-Heating-RTF-SFv3.7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mobile Home	Cooling	Windows - Low-e Storm Addition	sqft window	New	0.00	20	\$10.42	6%	8%	\$195.11	0.00	0.00	n/a
Mobile Home	Space Heating	Windows - Low-e Storm Addition	sqft window	New	6.11	20	\$10.42	6%	8%	\$195.11	2.18	2.74	WND_LOWE-Heating-RTF-MHv4.4-1
Mobile Home	Cooling	Windows - Install Reflective Film	sqft window	New	0.65	10	\$3.73	12%	56%	\$919.98	24.67	32.18	WND_FLM-HVAC-CMUATRM-2016-12
Mobile Home	Cooling	Windows - Cellular Shades	household	New	81.65	15	\$1,538.71	4%	19%	\$203.57	10.15	12.87	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Space Heating	Windows - Cellular Shades	household	New	901.38	15	\$1,538.71	4%	19%	\$203.57	18.69	23.39	WND_CELLSHD-HVAC-E3T-474-1
Mobile Home	Cooling	Doors - Storm and Thermal	sqft door	New	0.00	45	\$18.64	1%	80%	\$141.21	0.00	0.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Space Heating	Doors - Storm and Thermal	sqft door	New	13.10	45	\$18.64	1%	80%	\$141.21	25.45	32.00	DOR_TH-Heating-RTF-MFv3.4-1
Mobile Home	Cooling	HVAC - Plant Shade Trees	household	New	70.13	30	\$59.05	1%	80%	\$90.52	61.84	75.12	SHADETREE-Cooling-AEG-1
Mobile Home	Space Heating	HVAC - Plant Shade Trees	household	New	0.00	30	\$59.05	1%	80%	\$90.52	0.00	0.00	SHADETREE-Cooling-AEG-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Zonal)	household	New	73.36	15	\$4,269.72	0%	38%	\$425.44	6.03	7.54	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Zonal)	household	New	1,151.23	15	\$4,269.72	0%	38%	\$425.44	27.06	33.77	DHP-Heating-RTF-SFv4.1-1
Mobile Home	Cooling	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	116.45	15	\$4,031.10	0%	38%	\$243.12	12.31	15.96	DHP-Cooling-RTF-SFv4.1-1
Mobile Home	Space Heating	Ductless Mini Split Heat Pump (Ducted Forced Air)	household	New	1,914.82	15	\$4,031.10	0%	38%	\$243.12	49.16	61.41	DHP-Heating-RTF-v1.6-1
Mobile Home	Space Heating	Space Heating - Heat Recovery Ventilator	household	New	710.48	20	\$1,348.08	0%	15%	\$217.00	22.58	26.34	RES_HRV-Heating-7PLN-v1-2
Mobile Home	Space Heating	Furnace - Conversion to Air-Source Heat Pump	household	New	1,999.60	15	\$3,379.23	0%	0%	\$208.68	0.00	0.00	FAFtoASHP-Heating-RTF-SFv4.1-1
Mobile Home	Space Heating	Furnace - Maintenance	household	New	402.11	2	\$80.50	7%	75%	\$109.38	1.57	2.04	FURN_MNT-Heating-AEG-2

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Mobile Home	Cooling	Room AC - Removal of Second Unit	household	New	655.22	3	\$18.46	0%	50%	\$10.86	25.65	32.83	RAC_RMV-Cooling-DEER-1
Mobile Home	Cooling	Central AC - Maintenance and Tune-Up	household	New	52.02	6	\$285.43	45%	75%	\$1,265.89	2.96	3.63	CAC_MNT-Cooling-ILTRM-v4.0-1
Mobile Home	Cooling	Central Heat Pump - Controls and Commissioning	household	New	0.69	15	\$601.89	25%	75%	\$141.60	0.00	0.00	ASHP_MNT-Cooling-RTF-SFv3.4-1
Mobile Home	Space Heating	Central Heat Pump - Controls and Commissioning	household	New	551.39	15	\$601.89	25%	75%	\$141.60	2.49	3.11	ASHP_MNT-Heating-RTF-SFv3.4-1
Mobile Home	Cooling	Integrated Heat Pump - Combination HVAC and DHW	household	New	245.16	15	\$6,408.00	5%	20%	\$205.92	3.76	4.40	RES_ASIHP-Cooling-AEG-NEEA-1
Mobile Home	Space Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	2,007.70	15	\$6,408.00	5%	20%	\$205.92	32.85	37.70	RES_ASIHP-Heating-AEG-NEEA-1
Mobile Home	Water Heating	Integrated Heat Pump - Combination HVAC and DHW	household	New	1,834.59	15	\$6,408.00	5%	20%	\$205.92	28.96	33.40	RES_ASIHP-Water Heating-AEG-NEEA-1
Mobile Home	Cooling	Ceiling Fan - ENERGY STAR	ceiling fans	New	11.04	10	\$48.72	40%	75%	\$711.54	6.44	7.64	FN_WH-Cooling-CPUC-1
Mobile Home	Cooling	Whole-House Fan - Installation	household	New	38.65	20	\$737.07	15%	40%	\$2,201.72	6.73	8.58	STAT_SMRT-HVAC - Cooling/Heating-7PLN-v3-1
Mobile Home	Cooling	Thermostat - Connected	household	New	6.33	5	\$254.58	4%	56%	\$198.77	1.60	2.08	STAT_SMRT-Cooling-RTF-v1.3-1
Mobile Home	Space Heating	Thermostat - Connected	household	New	321.09	5	\$254.58	4%	56%	\$198.77	13.51	17.23	STAT_SMRT-Heating-RTF-v1.3-1
Mobile Home	Cooling	Connected Home Control System	household	New	27.45	5	\$485.43	1%	19%	\$231.61	2.32	3.00	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Space Heating	Connected Home Control System	household	New	497.73	5	\$485.43	1%	19%	\$231.61	6.98	8.90	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2

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Mobile Home	Interior Lighting	Connected Home Control System	household	New	6.17	5	\$485.43	1%	19%	\$231.61	1.07	1.59	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Exterior Lighting	Connected Home Control System	household	New	3.24	5	\$485.43	1%	19%	\$231.61	0.20	0.29	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Miscellaneous	Connected Home Control System	household	New	5.07	5	\$485.43	1%	19%	\$231.61	0.92	1.20	RES_EMS-Miscellaneous-HITRM-PY3 No.2011-2
Mobile Home	Water Heating	Water Heater - Drainwater Heat Recovery	household	New	235.87	40	\$864.21	1%	10%	\$377.96	13.25	15.48	DHW_DWHR-Water Heating-7PLN-v3-1
Mobile Home	Water Heating	Water Heater - Faucet Aerators	aerators	New	104.51	15	\$5.30	29%	50%	(\$195.82)	35.16	42.72	DHW_AER-Water Heating-7PLN-v4-1
Mobile Home	Water Heating	Water Heater - Low-Flow Showerheads	showerheads	New	93.83	10	\$0.01	43%	75%	(\$354.03)	10.37	13.44	DHW_SHW-Water Heating-RTF-v3.1-5
Mobile Home	Water Heating	Water Heater - Pipe Insulation	feet pipe	New	25.68	15	\$3.37	12%	75%	\$17.45	26.76	34.04	DHW_PINS-Water Heating-MIDATL-v3.0-1
Mobile Home	Water Heating	Water Heater - Desuperheater	household	New	1,439.27	20	\$1,175.39	0%	0%	\$95.59	0.00	0.00	DHW_DSH-Water Heating-RTF-v2.2-1
Mobile Home	Water Heating	Water Heater - Temperature Setback	household	New	80.55	2	\$5.13	51%	75%	\$35.67	1.36	1.80	DHW_STBK-Water Heating-ILTRM-v4.0-3
Mobile Home	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	showerheads	New	52.99	10	\$16.82	16%	45%	\$51.90	5.38	6.97	DHW_TSRVLV-Water Heating-RTF-v1.3-1
Mobile Home	Water Heating	Water Heater - Solar System	household	New	1,189.06	20	\$9,127.71	1%	30%	\$898.55	185.38	210.79	DHW_WHsm-Water Heating-7PLN-v1-3
Mobile Home	Water Heating	Circulation Pump - High Efficiency	household	New	330.43	12	\$72.03	1%	10%	\$37.67	17.00	20.05	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Space Heating	Circulation Pump - High Efficiency	household	New	-43.26	12	\$72.03	1%	10%	\$37.67	-0.74	-0.87	RCIRCMPM_UPG-All-RTF-v1.2-3
Mobile Home	Interior Lighting	Interior Lighting - Occupancy Sensors	occ sens	New	120.45	8	\$102.48	0%	10%	\$248.86	3.84	6.16	RLTG_OS-Interior Lighting-PGE-Rev. 3-1

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Mobile Home	Exterior Lighting	Exterior Lighting - Photosensor Control	ext fixt	New	25.82	15	\$10.55	11%	50%	\$80.43	9.87	14.55	RLTG_EXT_PSENS-Exterior Lighting-MEMD-v. 2014-1
Mobile Home	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	ext fixt pv	New	28.69	3	\$28.71	1%	30%	\$585.46	1.24	2.15	RLTG_EXT_PV-Exterior Lighting-AEG-1
Mobile Home	Exterior Lighting	Exterior Lighting - Timeclock Installation	ext fixt	New	19.33	10	\$19.80	3%	50%	\$247.73	7.17	11.00	RLTG_EXT_TIM-Exterior Lighting-IESOTRM-2015-2
Mobile Home	Appliances	Refrigerator - Decommissioning and Recycling	household	New	210.74	7	\$222.66	0%	65%	\$213.67	26.36	33.35	RFG_DEC-Appliances-RTF-v5.1-1
Mobile Home	Appliances	Freezer - Decommissioning and Recycling	household	New	235.83	6	\$145.11	0%	10%	\$137.61	13.34	16.91	FRZ_DEC-Appliances-RTF-v5.1-1
Mobile Home	Electronics	Advanced Power Strips - Load or Occupancy	smart strip	New	34.47	5	\$37.31	8%	25%	\$262.68	9.54	11.18	SMARTSTRIP-Electronics-RTF-v2.4-1
Mobile Home	Electronics	Advanced Power Strips - IR Sensing	smart strip	New	66.08	5	\$50.76	8%	25%	\$186.44	18.30	21.43	SMARTSTRIP-Electronics-RTF-v2.4-4
Mobile Home	Miscellaneous	Pool Pump - Timer	household	New	838.36	10	\$19.59	0%	75%	\$3.73	3.09	3.89	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Mobile Home	Miscellaneous	Pool Heater - Solar Water Heating System	household	New	1,319.71	20	\$3,900.44	0%	30%	\$337.34	0.68	0.78	PLHT_SOL-Miscellaneous-AEG-1
Mobile Home	Miscellaneous	Pool Cleaner - Robotic	household	New	1,386.73	5	\$835.50	0%	30%	\$153.69	1.32	1.67	PLPMP_ROBOT-Miscellaneous-PGE-1
Mobile Home	Exterior Lighting	LED Pool and Spa Lighting	pool light	New	1.43	16	\$179.25	0%	30%	\$9,999.00	1.31	1.83	POOLSPALED-Exterior Lighting-SCE-R0-1
Mobile Home	Cooling	ENERGY STAR Home Design	household	New	7.20	45	\$6,198.54	14%	68%	\$5,140.27	5.18	6.05	ESTARH-Cooling-RTF-SFWAv3.1-8
Mobile Home	Space Heating	ENERGY STAR Home Design	household	New	79.44	45	\$6,198.54	14%	68%	\$5,140.27	58.37	67.66	ESTARH-Heating-RTF-SFWAv3.1-7
Mobile Home	Water Heating	ENERGY STAR Home Design	household	New	29.89	45	\$6,198.54	14%	68%	\$5,140.27	21.31	24.80	ESTARH-Water Heating-RTF-SFWAv3.1-3

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Mobile Home	Interior Lighting	ENERGY STAR Home Design	household	New	6.18	45	\$6,198.54	14%	68%	\$5,140.27	2.48	3.10	ESTARH-Interior Lighting-RTF-SFWAv3.1-1
Mobile Home	Cooling	Advanced New Construction Design - Zero Net Energy	household	New	359.82	20	\$12,066.34	2%	8%	\$178.53	19.80	23.13	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Space Heating	Advanced New Construction Design - Zero Net Energy	household	New	3,972.10	20	\$12,066.34	2%	8%	\$178.53	223.10	258.68	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Water Heating	Advanced New Construction Design - Zero Net Energy	household	New	1,494.62	20	\$12,066.34	2%	8%	\$178.53	81.44	94.79	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Interior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	308.83	20	\$12,066.34	2%	8%	\$178.53	9.46	11.79	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Exterior Lighting	Advanced New Construction Design - Zero Net Energy	household	New	54.05	20	\$12,066.34	2%	8%	\$178.53	1.75	2.19	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Appliances	Advanced New Construction Design - Zero Net Energy	household	New	1,181.11	20	\$12,066.34	2%	8%	\$178.53	67.14	77.49	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Electronics	Advanced New Construction Design - Zero Net Energy	household	New	355.10	20	\$12,066.34	2%	8%	\$178.53	22.26	24.69	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Miscellaneous	Advanced New Construction Design - Zero Net Energy	household	New	155.63	20	\$12,066.34	2%	8%	\$178.53	8.21	9.58	RES_ADVNC_ZNE-AII-PGE-3
Mobile Home	Cooling	Behavioral Programs	household	New	0.81	5	\$33.89	37%	37%	\$59.17	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Space Heating	Behavioral Programs	household	New	8.89	5	\$33.89	37%	37%	\$59.17	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Water Heating	Behavioral Programs	household	New	131.35	5	\$33.89	37%	37%	\$59.17	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Interior Lighting	Behavioral Programs	household	New	13.31	5	\$33.89	37%	37%	\$59.17	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

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Mobile Home	Exterior Lighting	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$59.17	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Appliances	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$59.17	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Electronics	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$59.17	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1
Mobile Home	Miscellaneous	Behavioral Programs	household	New	0.00	5	\$33.89	37%	37%	\$59.17	0.00	0.00	RES_BEHAV-HVAC-7PLN-v2-1

Commercial Measures

California Commercial Measures Assumptions

Table I-6 Summary of Commercial Measure Assumptions in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	20.98	20	\$2.19	14%	100%	\$23.37	3.62	4.00	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	45.09	25	\$20.82	8%	100%	\$54.83	4.92	5.42	AEG BEST
Large Office	Cooling	RTU	1 kBTU/hr	Existing	8.52	15	\$1.02	44%	100%	\$17.09	5.30	5.97	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	Existing	115.42	15	\$210.81	2%	100%	\$262.06	0.30	0.33	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	Existing	108.36	15	\$200.86	1%	100%	\$120.07	0.09	0.10	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	2.61	15	\$2.34	14%	100%	\$73.78	0.34	0.37	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	11.20	25	\$22.89	8%	100%	\$172.70	0.58	0.62	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	Existing	131.64	15	\$200.86	1%	100%	\$120.07	0.11	0.12	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.93	15	\$2.34	14%	100%	\$73.78	0.25	0.27	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	5.45	25	\$22.89	8%	100%	\$172.70	0.28	0.30	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	28,424.31	20	\$1,330.55	100%	100%	\$5.50	14.78	15.87	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	45%	100%	(\$486.83)	0.50	0.56	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	Existing	59.90	8	\$1.09	100%	100%	(\$65.18)	1.77	2.33	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	Existing	66.85	8	\$4.71	100%	100%	(\$21.16)	1.10	1.27	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	24.12	17	\$28.54	100%	100%	\$44.36	10.57	10.73	USDOE SSL Projections - 2016
Large Office	Interior Lighting	High-Bay Lighting	lamps	Existing	311.04	15	\$6.29	100%	100%	(\$109.22)	16.94	17.80	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	Existing	140.17	8	\$1.06	100%	100%	(\$33.03)	0.40	0.63	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	27.18	17	\$28.54	100%	100%	\$38.51	0.92	0.97	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	990.70	15	\$157.49	100%	100%	(\$29.63)	23.36	24.97	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	14%	100%	\$361.58	0.08	0.09	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	45%	100%	\$35.66	0.06	0.07	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	45%	100%	\$96.27	0.04	0.04	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	66%	100%	(\$11.26)	0.90	1.01	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	76%	100%	\$66.90	0.53	0.59	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	43%	100%	(\$17.77)	0.49	0.55	DW-Food Preparation-XCELCO-2017-18-1
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	43%	100%	\$92.54	0.27	0.29	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	43%	100%	(\$39.33)	1.93	2.09	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	3.17	3.76	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.19	0.22	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.42	0.50	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	100%	10%	\$0.04	0.29	0.34	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	40%	10%	\$0.02	0.01	0.02	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	21.80	20	\$2.19	14%	100%	\$17.69	2.23	2.44	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	32.52	25	\$7.67	8%	100%	\$59.93	2.64	2.91	AEG BEST
Large Office	Cooling	RTU	1 kBTU/hr	New	5.74	15	\$1.02	44%	100%	\$25.38	1.98	2.19	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	New	102.46	15	\$210.81	2%	100%	\$295.19	0.15	0.16	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	New	96.20	15	\$200.86	1%	100%	\$129.56	0.04	0.05	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.26	15	\$2.34	14%	100%	\$82.66	0.18	0.19	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	11.20	25	\$22.89	8%	100%	\$172.70	0.35	0.38	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	New	126.22	15	\$200.86	1%	100%	\$129.56	0.06	0.06	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.80	15	\$2.34	14%	100%	\$82.66	0.14	0.15	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	5.45	25	\$22.89	8%	100%	\$172.70	0.17	0.18	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	23,537.31	20	\$1,330.55	100%	100%	\$6.64	10.49	11.29	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	45%	100%	(\$486.83)	0.26	0.28	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	New	59.90	8	\$1.09	100%	100%	(\$65.18)	0.53	0.63	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	New	66.85	8	\$4.71	100%	100%	(\$21.16)	0.30	0.33	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	New	24.12	17	\$28.54	100%	100%	\$44.36	4.66	4.73	USDOE SSL Projections - 2016
Large Office	Interior Lighting	High-Bay Lighting	lamps	New	311.04	15	\$6.29	100%	100%	(\$109.22)	8.61	9.05	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	New	140.17	8	\$1.06	100%	100%	(\$33.03)	0.12	0.16	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Linear Lighting	lamps	New	27.18	17	\$28.54	100%	100%	\$38.51	0.41	0.42	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Area Lighting	lamps	New	990.70	15	\$157.49	100%	100%	(\$29.63)	12.69	13.48	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	14%	100%	\$361.58	0.05	0.05	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	45%	100%	\$35.66	0.03	0.03	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	45%	100%	\$96.27	0.02	0.02	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	66%	100%	(\$11.26)	0.47	0.51	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	76%	100%	\$66.90	0.26	0.28	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	43%	100%	(\$17.77)	0.19	0.21	DW-Food Preparation-XCELCO-2017-18-1
Large Office	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	43%	100%	\$92.54	0.18	0.19	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	43%	100%	(\$39.12)	1.21	1.31	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	1.16	1.32	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.07	0.08	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.13	0.15	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	100%	10%	\$0.04	0.10	0.11	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	40%	10%	\$0.02	0.01	0.01	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	Existing	9.41	15	\$1.02	66%	100%	\$15.48	359.46	405.11	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	12.37	25	\$22.89	7%	100%	\$154.68	26.30	28.24	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	6.23	25	\$22.89	7%	100%	\$154.68	13.23	14.21	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	18,111.90	20	\$1,330.55	100%	100%	\$8.63	552.53	593.34	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	60%	100%	(\$486.83)	24.89	28.04	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	Existing	56.37	8	\$1.09	100%	100%	(\$68.47)	70.27	92.62	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	Existing	81.56	8	\$4.71	100%	100%	(\$17.34)	61.43	71.11	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	26.09	17	\$28.54	100%	100%	\$42.18	366.87	377.82	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	Existing	448.28	15	\$6.29	100%	100%	(\$76.34)	1,038.88	1,095.30	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	Existing	107.28	8	\$1.06	100%	100%	(\$34.69)	47.06	59.08	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	89.80	17	\$64.65	100%	100%	\$30.40	16.57	17.77	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	887.08	15	\$157.49	100%	100%	(\$33.09)	1,253.31	1,339.42	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	9%	100%	\$361.58	12.56	13.70	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	5%	100%	\$35.66	2.43	2.73	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	5%	100%	\$96.27	1.07	1.16	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	4%	100%	(\$11.26)	14.61	16.13	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	4%	100%	\$66.90	2.24	2.48	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	4%	100%	(\$17.77)	21.41	23.55	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	4%	100%	\$92.54	6.76	7.26	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	Existing	44,174.97	20	\$142.38	4%	100%	(\$39.12)	48.57	52.78	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	69.86	83.04	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	4.14	4.81	CEL_PCLT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	9.28	11.08	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	100%	10%	\$0.04	19.39	22.42	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	20%	10%	\$0.02	1.02	1.18	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	New	5.89	15	\$1.02	66%	100%	\$24.71	125.30	138.33	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$164.60	0.15	0.15	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	12.37	25	\$22.89	7%	100%	\$154.68	15.94	17.10	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$164.60	0.19	0.19	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	6.23	25	\$22.89	7%	100%	\$154.68	8.02	8.61	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	New	16,463.02	20	\$1,330.55	100%	100%	\$9.50	385.30	414.42	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	60%	100%	(\$486.83)	12.92	14.15	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	New	56.37	8	\$1.09	100%	100%	(\$68.47)	20.51	24.68	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	New	81.56	8	\$4.71	100%	100%	(\$17.34)	16.95	19.02	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	New	26.09	17	\$28.54	100%	100%	\$42.18	161.52	166.23	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	New	448.28	15	\$6.29	100%	100%	(\$76.34)	516.53	544.61	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	New	107.28	8	\$1.06	100%	100%	(\$34.69)	15.55	17.81	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	New	89.80	17	\$64.65	100%	100%	\$30.40	7.03	7.52	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	New	887.08	15	\$157.49	100%	100%	(\$33.09)	691.12	733.67	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	9%	100%	\$361.58	7.04	7.53	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	5%	100%	\$35.66	1.08	1.17	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	5%	100%	\$96.27	0.34	0.37	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	New	14,847.2 ₉	10	\$1,104.16	4%	100%	(\$11.26)	7.97	8.58	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	4%	100%	\$66.90	1.10	1.19	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	4%	100%	(\$17.77)	4.62	4.97	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	4%	100%	\$92.54	4.75	5.05	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	New	44,174.9 ₇	20	\$142.38	4%	100%	(\$39.12)	31.39	33.64	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	25.59	29.19	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	1.48	1.68	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	2.80	3.24	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	100%	10%	\$0.04	6.70	7.56	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	20%	10%	\$0.02	0.39	0.43	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	13.78	20	\$2.19	1%	100%	\$20.39	1.11	1.23	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	24.42	25	\$7.67	1%	100%	\$68.94	1.45	1.58	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	5.96	15	\$1.02	79%	100%	\$24.46	37.59	42.32	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	32,397.5 ₉	20	\$1,330.55	100%	100%	\$4.83	136.83	146.86	AEG-BEST
Large Retail	Water Heating	Water Heater	1 kBtu/hr	Existing	1.20	13	\$1.69	66%	100%	(\$486.83)	2.77	3.11	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	Existing	146.47	8	\$1.09	100%	100%	(\$35.24)	11.52	19.16	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	Existing	346.69	8	\$4.71	100%	100%	(\$4.08)	27.96	32.11	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	132.99	17	\$64.65	100%	100%	\$20.48	82.82	88.80	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	771.42	15	\$6.29	100%	100%	(\$44.15)	148.83	156.63	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	Existing	147.41	8	\$1.06	100%	100%	(\$30.22)	5.25	7.57	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	102.40	17	\$64.65	100%	100%	\$26.60	1.79	1.92	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	908.61	15	\$157.49	100%	100%	(\$32.30)	53.79	57.51	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	14%	100%	\$361.58	0.81	0.89	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	52%	100%	\$35.66	1.39	1.57	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	52%	100%	\$96.27	0.44	0.48	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	49%	100%	(\$11.26)	5.16	5.78	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	45%	100%	\$66.90	2.35	2.60	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	40%	100%	(\$17.77)	3.55	3.94	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	40%	100%	\$92.54	1.87	2.01	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	40%	100%	(\$39.33)	13.41	14.47	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	1.65	1.96	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.10	0.11	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.22	0.26	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	82%	10%	\$0.04	0.20	0.23	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	0.03	0.04	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	12.51	20	\$2.19	1%	100%	\$22.45	0.54	0.59	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	19.86	25	\$7.67	1%	100%	\$66.78	0.57	0.63	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	New	5.08	15	\$1.02	79%	100%	\$28.66	15.81	17.45	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$64.12	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	28,039.21	20	\$1,330.55	100%	100%	\$5.58	80.32	86.36	AEG-BEST
Large Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	66%	100%	(\$486.83)	1.22	1.34	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	New	146.47	8	\$1.09	100%	100%	(\$35.24)	3.23	4.66	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Interior Lighting	Exempted Lighting	lamps	New	346.69	8	\$4.71	100%	100%	(\$4.08)	7.42	8.27	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Linear Lighting	lamps	New	132.99	17	\$64.65	100%	100%	\$20.48	31.24	33.37	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	New	771.42	15	\$6.29	100%	100%	(\$44.15)	71.38	74.95	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	New	147.41	8	\$1.06	100%	100%	(\$30.22)	1.41	1.82	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	102.40	17	\$64.65	100%	100%	\$26.60	0.68	0.72	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	New	908.61	15	\$157.49	100%	100%	(\$32.30)	24.05	25.64	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	14%	100%	\$361.58	0.40	0.42	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	52%	100%	\$35.66	0.56	0.62	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	52%	100%	\$96.27	0.18	0.20	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	49%	100%	(\$11.26)	2.39	2.60	COOK_OVN-Food Preparation-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	45%	100%	\$66.90	1.02	1.10	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	40%	100%	(\$17.77)	1.17	1.27	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	40%	100%	\$92.54	1.09	1.16	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	40%	100%	(\$39.12)	7.49	8.09	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.54	0.61	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.03	0.04	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.06	0.07	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	82%	10%	\$0.04	0.06	0.07	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.01	0.01	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	Existing	6.73	15	\$1.02	67%	100%	\$21.65	125.13	140.89	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	8.83	25	\$22.89	8%	100%	\$227.49	9.17	9.84	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	3.81	25	\$22.89	8%	100%	\$227.49	3.96	4.25	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	10,605.57	20	\$1,330.55	100%	100%	\$14.75	156.43	167.90	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	62%	100%	(\$486.83)	8.20	9.22	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	Existing	96.67	8	\$1.09	100%	100%	(\$53.40)	26.55	44.15	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	Existing	228.82	8	\$4.71	100%	100%	(\$6.18)	64.44	74.01	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	87.77	17	\$64.65	100%	100%	\$31.02	190.89	204.68	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	509.14	15	\$6.29	100%	100%	(\$66.90)	343.05	361.01	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	Existing	147.41	8	\$1.06	100%	100%	(\$30.22)	18.34	26.44	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	102.40	17	\$64.65	100%	100%	\$26.60	6.27	6.72	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	908.61	15	\$157.49	100%	100%	(\$32.30)	187.86	200.82	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	5%	100%	\$361.58	1.13	1.23	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	5%	100%	\$35.66	0.52	0.59	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	5%	100%	\$96.27	0.23	0.25	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	4%	100%	(\$11.26)	5.06	5.58	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	4%	100%	\$66.90	0.77	0.85	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	4%	100%	(\$17.77)	7.42	8.15	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	4%	100%	\$92.54	2.37	2.55	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	Existing	44,174.97	20	\$142.38	4%	100%	(\$39.12)	16.97	18.43	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	1.95	2.32	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.12	0.14	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.26	0.31	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	100%	10%	\$0.04	2.19	2.53	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	0.54	0.63	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	New	5.05	15	\$1.02	67%	100%	\$28.85	46.31	51.10	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	8.83	25	\$22.89	8%	100%	\$227.49	4.94	5.30	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	3.81	25	\$22.89	8%	100%	\$227.49	2.13	2.29	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	10,003.44	20	\$1,330.55	100%	100%	\$15.63	100.07	107.60	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	62%	100%	(\$486.83)	3.62	3.96	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	New	96.67	8	\$1.09	100%	100%	(\$53.40)	7.45	10.73	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	New	228.82	8	\$4.71	100%	100%	(\$6.18)	17.10	19.05	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	New	87.77	17	\$64.65	100%	100%	\$31.02	71.99	76.93	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	New	509.14	15	\$6.29	100%	100%	(\$66.90)	164.53	172.76	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	New	147.41	8	\$1.06	100%	100%	(\$30.22)	4.92	6.34	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	102.40	17	\$64.65	100%	100%	\$26.60	2.36	2.52	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	New	908.61	15	\$157.49	100%	100%	(\$32.30)	84.00	89.53	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	5%	100%	\$361.58	0.55	0.59	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	5%	100%	\$35.66	0.20	0.22	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	5%	100%	\$96.27	0.06	0.07	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	4%	100%	(\$11.26)	2.40	2.58	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	4%	100%	\$66.90	0.33	0.36	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	4%	100%	(\$17.77)	1.39	1.49	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	4%	100%	\$92.54	1.43	1.52	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	4%	100%	(\$39.12)	9.45	10.12	COOK_STM-Food Preparation-RTF-v2.4-2
Small Retail	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.63	0.72	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.04	0.04	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.07	0.08	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	100%	10%	\$0.04	0.67	0.75	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.19	0.22	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	5.20	15	\$1.02	73%	100%	\$28.02	39.87	44.89	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	19%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	8,235.07	20	\$1,330.55	100%	100%	\$18.99	46.65	50.07	AEG-BEST
Restaurant	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	58%	100%	(\$486.83)	16.98	19.10	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	Existing	120.04	8	\$1.09	100%	100%	(\$35.12)	41.50	55.17	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	Existing	738.11	8	\$4.71	100%	100%	(\$1.92)	61.37	70.22	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	156.42	17	\$64.65	100%	100%	\$17.46	48.98	52.55	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	Existing	1,216.60	15	\$6.29	100%	100%	(\$28.84)	174.10	185.77	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	Existing	109.79	8	\$1.06	100%	100%	(\$34.05)	5.57	7.26	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	105.89	17	\$64.65	100%	100%	\$25.79	8.63	9.26	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	889.16	15	\$157.49	100%	100%	(\$32.99)	134.86	144.13	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	7%	100%	\$361.58	21.03	22.89	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	97%	100%	\$35.66	22.21	25.08	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	97%	100%	\$96.27	6.77	7.40	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Food Preparation	Oven	1 unit	Existing	14,847.2 ₉	10	\$1,104.16	21%	100%	(\$11.26)	60.32	67.23	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	82%	100%	\$66.90	96.49	106.73	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	53%	100%	(\$17.77)	47.15	52.46	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	84%	100%	\$92.54	41.15	44.30	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	Existing	44,174.9 ₇	20	\$142.38	16%	100%	(\$39.12)	79.27	85.70	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	1.47	1.75	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.07	0.08	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.20	0.23	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	50%	10%	\$0.04	1.08	1.25	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	0.41	0.47	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Restaurant	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	New	3.85	15	\$1.02	73%	100%	\$37.79	14.57	16.08	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	19%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	6,951.50	20	\$1,330.55	100%	100%	\$22.50	26.92	28.95	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	58%	100%	(\$486.83)	8.24	9.03	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	New	120.04	8	\$1.09	100%	100%	(\$35.12)	13.47	16.00	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	New	738.11	8	\$4.71	100%	100%	(\$1.92)	19.62	21.69	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	New	156.42	17	\$64.65	100%	100%	\$17.46	18.47	19.75	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	New	1,216.60	15	\$6.29	100%	100%	(\$28.84)	73.35	78.25	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	New	109.79	8	\$1.06	100%	100%	(\$34.05)	1.43	1.70	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	105.89	17	\$64.65	100%	100%	\$25.79	3.25	3.48	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	New	889.16	15	\$157.49	100%	100%	(\$32.99)	62.89	66.90	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	7%	100%	\$361.58	10.21	10.90	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	97%	100%	\$35.66	8.97	9.82	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	97%	100%	\$96.27	2.89	3.10	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	21%	100%	(\$11.26)	29.03	31.46	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	82%	100%	\$66.90	41.79	45.20	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	53%	100%	(\$17.77)	16.61	18.06	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	84%	100%	\$92.54	22.58	24.13	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	16%	100%	(\$39.12)	46.47	50.05	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.48	0.55	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.02	0.03	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.05	0.06	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	50%	10%	\$0.04	0.33	0.37	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.15	0.16	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	27.48	20	\$2.19	1%	100%	\$40.47	1.03	1.13	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	51.55	25	\$20.82	0%	100%	\$47.96	1.03	1.14	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	Existing	10.13	15	\$1.02	71%	100%	\$14.38	49.45	55.73	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	12,852.3 ₃	20	\$1,330.55	100%	100%	\$12.17	46.86	50.32	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	63%	100%	(\$486.83)	4.69	5.28	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	Existing	157.32	8	\$1.09	100%	100%	(\$27.63)	15.04	19.90	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	Existing	305.21	8	\$4.71	100%	100%	(\$4.64)	15.51	17.92	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	173.96	17	\$64.65	100%	100%	\$15.44	137.82	147.28	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	Existing	938.95	15	\$6.29	100%	100%	(\$36.01)	177.89	186.49	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	Existing	162.81	8	\$1.06	100%	100%	(\$28.89)	8.53	12.74	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	92.70	17	\$64.65	100%	100%	\$29.00	8.53	9.12	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	856.97	15	\$157.49	100%	100%	(\$34.17)	135.93	145.12	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	83%	100%	\$361.58	14.71	16.16	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	99%	100%	\$35.66	2.93	3.31	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	99%	100%	\$96.27	1.77	1.94	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	11%	100%	(\$11.26)	7.38	8.21	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	87%	100%	\$66.90	18.31	20.26	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	55%	100%	(\$17.77)	17.15	19.10	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	73%	100%	\$92.54	12.98	13.98	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Grocery	Food Preparation	Steamer	1 unit	Existing	44,174.97	20	\$142.38	20%	100%	(\$39.12)	31.61	34.13	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	0.91	1.08	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	64%	10%	\$0.09	0.04	0.04	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.12	0.14	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	100%	10%	\$0.04	0.50	0.58	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	0.31	0.36	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	23.65	20	\$2.19	1%	100%	\$11.88	0.49	0.53	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	41.91	25	\$20.82	0%	100%	\$58.99	0.51	0.56	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	New	8.67	15	\$1.02	71%	100%	\$16.80	23.55	26.00	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	17,539.97	20	\$1,330.55	100%	100%	\$8.92	49.36	53.09	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	63%	100%	(\$486.83)	3.31	3.63	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	New	157.32	8	\$1.09	100%	100%	(\$27.63)	6.94	8.02	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	New	305.21	8	\$4.71	100%	100%	(\$4.64)	4.33	4.85	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Linear Lighting	lamps	New	173.96	17	\$64.65	100%	100%	\$15.44	58.54	62.36	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	New	938.95	15	\$6.29	100%	100%	(\$36.01)	99.77	104.33	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	New	162.81	8	\$1.06	100%	100%	(\$28.89)	2.70	3.54	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Linear Lighting	lamps	New	92.70	17	\$64.65	100%	100%	\$29.00	3.62	3.86	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	New	856.97	15	\$157.49	100%	100%	(\$34.17)	73.93	78.47	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	83%	100%	\$361.58	7.64	8.23	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	99%	100%	\$35.66	1.34	1.47	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	99%	100%	\$96.27	0.86	0.93	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	11%	100%	(\$11.26)	4.07	4.40	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	87%	100%	\$66.90	9.01	9.75	COOK_FRY-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	55%	100%	(\$17.77)	7.00	7.62	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	73%	100%	\$92.54	8.12	8.67	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	20%	100%	(\$39.12)	21.49	23.17	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.33	0.38	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	64%	10%	\$0.09	0.01	0.01	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.04	0.04	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	100%	10%	\$0.04	0.17	0.20	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.13	0.14	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	25.17	20	\$2.19	17%	100%	\$79.65	25.49	28.17	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	79.57	25	\$20.82	67%	100%	\$31.07	398.33	438.83	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	Existing	12.36	15	\$1.02	11%	100%	\$11.78	11.01	12.41	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	Existing	167.47	15	\$210.81	0%	100%	\$180.61	0.41	0.46	PTAC-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	3.79	15	\$2.34	1%	100%	\$51.02	0.14	0.15	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	16.19	25	\$22.89	1%	100%	\$121.45	0.55	0.59	AEG BEST
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	2.79	15	\$2.34	1%	100%	\$51.02	0.10	0.11	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	7.49	25	\$22.89	1%	100%	\$121.45	0.26	0.27	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	41,364.88	20	\$1,330.55	100%	100%	\$3.78	162.26	174.28	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	13%	100%	(\$486.83)	2.78	3.13	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	Existing	99.69	8	\$1.09	100%	100%	(\$30.80)	26.93	30.21	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	Existing	167.57	8	\$4.71	100%	100%	(\$8.44)	12.53	14.48	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	Existing	167.06	17	\$64.65	100%	100%	\$16.37	129.94	139.46	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	Existing	930.56	15	\$6.29	100%	100%	(\$36.47)	218.91	229.89	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	Existing	85.60	8	\$1.06	100%	100%	(\$37.40)	1.35	1.59	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	Existing	103.60	17	\$64.65	100%	100%	\$26.42	2.14	2.30	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	Existing	855.73	15	\$157.49	100%	100%	(\$34.23)	57.46	61.34	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	50%	100%	\$361.58	1.82	2.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	90%	100%	\$35.66	2.09	2.36	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	90%	100%	\$96.27	0.63	0.69	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	70%	100%	(\$11.26)	31.08	34.90	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	81%	100%	\$66.90	18.54	20.53	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	53%	100%	(\$17.77)	18.38	20.47	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	53%	100%	\$92.54	10.74	11.57	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	53%	100%	(\$39.33)	77.11	83.30	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	3.44	4.09	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.08	0.09	CEL_PCLT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.46	0.55	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	100%	10%	\$0.04	0.38	0.44	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	0.24	0.28	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	New	19.30	20	\$2.19	17%	100%	\$67.88	11.12	12.17	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	New	56.60	25	\$20.82	67%	100%	\$43.68	177.78	195.80	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	New	10.68	15	\$1.02	11%	100%	\$13.64	5.49	6.06	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	New	148.67	15	\$210.81	0%	100%	\$203.45	0.21	0.23	PTAC-Cooling-AEG-v2-1
Health	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	New	4.21	15	\$2.34	1%	100%	\$58.17	0.09	0.10	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	New	16.19	25	\$22.89	1%	100%	\$121.45	0.35	0.37	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.56	15	\$2.34	1%	100%	\$58.17	0.04	0.04	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	New	7.49	25	\$22.89	1%	100%	\$121.45	0.16	0.17	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	New	30,789.78	20	\$1,330.55	100%	100%	\$5.08	104.75	112.68	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	13%	100%	(\$486.83)	1.50	1.64	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	New	99.69	8	\$1.09	100%	100%	(\$30.80)	10.52	11.15	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	New	167.57	8	\$4.71	100%	100%	(\$8.44)	3.63	4.07	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	New	167.06	17	\$64.65	100%	100%	\$16.37	57.23	61.21	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	New	930.56	15	\$6.29	100%	100%	(\$36.47)	122.19	128.12	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	New	85.60	8	\$1.06	100%	100%	(\$37.40)	0.43	0.47	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	New	103.60	17	\$64.65	100%	100%	\$26.42	0.94	1.01	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	New	855.73	15	\$157.49	100%	100%	(\$34.23)	32.86	34.86	USDOE SSL Projections - 2016
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	50%	100%	\$361.58	1.00	1.08	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	90%	100%	\$35.66	0.99	1.09	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	90%	100%	\$96.27	0.32	0.34	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	New	14,847.2 ₉	10	\$1,104.16	70%	100%	(\$11.26)	16.81	18.31	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	81%	100%	\$66.90	9.50	10.28	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	53%	100%	(\$17.77)	7.79	8.48	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	53%	100%	\$92.54	7.14	7.63	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	New	44,174.9 ₇	20	\$142.38	53%	100%	(\$39.12)	49.37	53.41	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	1.31	1.49	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.03	0.03	CEL_PCLT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.14	0.17	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	100%	10%	\$0.04	0.14	0.15	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.10	0.11	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	19.35	20	\$2.19	28%	100%	\$14.52	30.65	33.91	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	Existing	4.92	15	\$1.02	47%	100%	\$29.60	14.21	16.02	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	Existing	66.65	15	\$210.81	3%	100%	\$453.79	0.98	1.09	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	Existing	62.49	15	\$200.86	2%	100%	\$137.14	0.64	0.71	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	6.45	25	\$22.89	6%	100%	\$244.13	1.11	1.19	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	8%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	Existing	147.64	15	\$200.86	2%	100%	\$137.14	1.52	1.68	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	5.33	25	\$22.89	6%	100%	\$244.13	0.91	0.98	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Ventilation	Ventilation	1000 CFM	Existing	15,626.36	20	\$1,330.55	100%	100%	\$10.01	50.17	53.90	AEG-BEST
College	Water Heating	Water Heater	1 kBtu/hr	Existing	1.20	13	\$1.69	55%	100%	(\$486.83)	3.59	4.05	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	Existing	54.15	8	\$1.09	100%	100%	(\$55.40)	4.03	4.40	USDOE SSL Projections - 2016
College	Interior Lighting	Exempted Lighting	lamps	Existing	43.48	8	\$4.71	100%	100%	(\$32.54)	1.25	1.45	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	Existing	94.76	17	\$64.65	100%	100%	\$28.95	47.70	51.23	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	Existing	505.70	15	\$6.29	100%	100%	(\$67.40)	97.85	102.91	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	Existing	172.11	8	\$1.06	100%	100%	(\$27.87)	0.26	0.42	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	Existing	98.26	17	\$64.65	100%	100%	\$27.92	13.34	14.32	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	Existing	658.87	15	\$157.49	100%	100%	(\$44.49)	18.41	19.65	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	13%	100%	\$361.58	0.56	0.61	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	27%	100%	\$35.66	0.28	0.31	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	27%	100%	\$96.27	0.09	0.10	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	21%	100%	(\$11.26)	2.98	3.33	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	21%	100%	\$66.90	1.23	1.36	COOK_FRY-Food Preparation-RTF-v2.3-1
College	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	21%	100%	(\$17.77)	2.92	3.24	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	21%	100%	\$92.54	1.28	1.37	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	Existing	44,174.97	20	\$142.38	21%	100%	(\$39.12)	9.13	9.85	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	2.04	2.42	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.04	0.04	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.27	0.32	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	100%	10%	\$0.04	0.22	0.26	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	0.07	0.08	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	Existing	145.82	7	\$234.00	90%	100%	\$68.32	0.59	0.57	CPLPUMP-Miscellaneous-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Miscellaneous	Pool Heater	1 unit	Existing	489.77	2	\$1.00	36%	100%	\$0.86	0.02	0.02	TBD
College	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	New	11.98	20	\$2.19	28%	100%	\$23.45	13.51	14.80	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	New	3.51	15	\$1.02	47%	100%	\$41.51	6.20	6.85	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	New	59.17	15	\$210.81	3%	100%	\$511.18	0.54	0.59	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	New	55.47	15	\$200.86	2%	100%	\$146.25	0.36	0.39	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	New	6.45	25	\$22.89	6%	100%	\$244.13	0.74	0.79	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	8%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	New	141.57	15	\$200.86	2%	100%	\$146.25	0.91	0.99	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	New	5.33	25	\$22.89	6%	100%	\$244.13	0.61	0.65	AEG BEST
College	Ventilation	Ventilation	1000 CFM	New	15,810.65	20	\$1,330.55	100%	100%	\$9.89	44.88	48.29	AEG-BEST
College	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	55%	100%	(\$486.83)	2.21	2.42	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	New	54.15	8	\$1.09	100%	100%	(\$55.40)	2.17	2.27	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Interior Lighting	Exempted Lighting	lamps	New	43.48	8	\$4.71	100%	100%	(\$32.54)	0.36	0.41	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	New	94.76	17	\$64.65	100%	100%	\$28.95	22.26	23.83	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	New	505.70	15	\$6.29	100%	100%	(\$67.40)	60.52	63.43	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	New	172.11	8	\$1.06	100%	100%	(\$27.87)	0.08	0.12	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	New	98.26	17	\$64.65	100%	100%	\$27.92	6.22	6.66	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	New	658.87	15	\$157.49	100%	100%	(\$44.49)	11.31	11.99	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	13%	100%	\$361.58	0.35	0.38	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	27%	100%	\$35.66	0.14	0.15	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	27%	100%	\$96.27	0.05	0.05	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	21%	100%	(\$11.26)	1.82	1.98	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	21%	100%	\$66.90	0.67	0.73	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	21%	100%	(\$17.77)	1.06	1.14	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	21%	100%	\$92.54	1.00	1.07	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	21%	100%	(\$39.12)	6.83	7.37	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.82	0.94	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.01	0.02	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.09	0.10	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	100%	10%	\$0.04	0.09	0.10	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.03	0.03	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	New	145.82	7	\$234.00	90%	100%	\$68.32	0.32	0.33	CPLPUMP-Miscellaneous-RTF-v2.1-1
College	Miscellaneous	Pool Heater	1 unit	New	489.77	2	\$1.00	36%	100%	\$0.86	0.00	0.00	TBD
College	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	8.95	20	\$2.19	22%	100%	\$31.40	56.40	62.36	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	Existing	2.28	15	\$1.02	36%	100%	\$64.01	26.17	29.49	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	Existing	30.83	15	\$210.81	2%	100%	\$981.17	1.81	2.01	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	Existing	28.90	15	\$200.86	2%	100%	\$263.58	1.19	1.32	PTHP-Cooling-AEG-v2-1
School	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	2.99	25	\$22.89	4%	100%	\$488.55	2.05	2.20	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	Existing	80.43	15	\$200.86	2%	100%	\$263.58	3.30	3.67	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	2.90	25	\$22.89	4%	100%	\$488.55	1.99	2.14	AEG BEST
School	Ventilation	Ventilation	1000 CFM	Existing	7,285.71	20	\$1,330.55	100%	100%	\$21.47	120.74	129.66	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	50%	100%	(\$486.83)	7.98	8.99	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	Existing	81.08	8	\$1.09	100%	100%	(\$67.00)	18.99	31.00	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	Existing	224.66	8	\$4.71	100%	100%	(\$6.30)	30.18	34.96	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	Existing	27.53	17	\$28.54	100%	100%	\$40.71	135.51	142.98	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	Existing	365.21	15	\$6.29	100%	100%	(\$92.98)	287.40	301.80	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	Existing	59.16	8	\$1.06	100%	100%	(\$42.04)	0.57	0.60	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Exterior Lighting	Linear Lighting	lamps	Existing	93.80	17	\$64.65	100%	100%	\$28.96	56.25	60.27	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	Existing	622.49	15	\$157.49	100%	100%	(\$47.18)	40.97	43.77	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	33%	100%	\$361.58	5.60	6.13	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	66%	100%	\$35.66	3.35	3.78	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	66%	100%	\$96.27	1.03	1.13	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	65%	100%	(\$11.26)	17.99	20.19	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	59%	100%	\$66.90	8.32	9.21	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	52%	100%	(\$17.77)	11.22	12.50	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	52%	100%	\$92.54	6.51	7.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	52%	100%	(\$39.33)	46.69	50.43	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	6.35	7.55	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.15	0.18	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.84	1.01	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	100%	10%	\$0.04	1.41	1.63	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	36%	10%	\$0.02	0.06	0.07	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	Existing	145.82	7	\$234.00	6%	100%	\$68.32	0.37	0.36	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	Existing	489.77	2	\$1.00	1%	100%	\$0.86	0.00	0.00	TBD
School	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
School	Cooling	Air-Cooled Chiller	1 kbtu/h	New	5.54	20	\$2.19	22%	100%	\$50.70	22.60	24.75	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$5.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	New	0.00	15	\$7.30	36%	100%	\$91.69	8.88	9.57	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	New	27.37	15	\$210.81	2%	100%	\$1,105.24	0.91	0.99	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	New	25.66	15	\$200.86	2%	100%	\$280.39	0.60	0.65	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	New	2.99	25	\$22.89	4%	100%	\$488.55	1.24	1.33	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	New	77.12	15	\$200.86	2%	100%	\$280.39	1.79	1.95	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	New	2.90	25	\$22.89	4%	100%	\$488.55	1.21	1.29	AEG BEST
School	Ventilation	Ventilation	1000 CFM	New	7,371.64	20	\$1,330.55	100%	100%	\$21.22	97.88	105.28	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	50%	100%	(\$486.83)	4.43	4.85	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	New	81.08	8	\$1.09	100%	100%	(\$67.00)	9.39	12.14	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	New	224.66	8	\$4.71	100%	100%	(\$6.30)	8.11	9.11	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	New	27.53	17	\$28.54	100%	100%	\$40.71	59.67	62.76	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	New	365.21	15	\$6.29	100%	100%	(\$92.98)	161.63	169.19	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	New	59.16	8	\$1.06	100%	100%	(\$42.04)	0.20	0.20	USDOE SSL Projections - 2016
School	Exterior Lighting	Linear Lighting	lamps	New	93.80	17	\$64.65	100%	100%	\$28.96	23.88	25.50	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	New	622.49	15	\$157.49	100%	100%	(\$47.18)	22.97	24.35	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	33%	100%	\$361.58	3.03	3.26	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	66%	100%	\$35.66	1.53	1.68	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	66%	100%	\$96.27	0.49	0.53	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	65%	100%	(\$11.26)	9.38	10.21	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	59%	100%	\$66.90	4.09	4.43	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	52%	100%	(\$17.77)	4.54	4.94	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	52%	100%	\$92.54	4.17	4.46	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	52%	100%	(\$39.12)	28.82	31.17	COOK_STM-Food Preparation-RTF-v2.4-2
School	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	2.33	2.65	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.05	0.06	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.25	0.29	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	100%	10%	\$0.04	0.49	0.55	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	36%	10%	\$0.02	0.03	0.03	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	New	145.82	7	\$234.00	6%	100%	\$68.32	0.18	0.18	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	New	489.77	2	\$1.00	1%	100%	\$0.86	0.00	0.00	TBD
School	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	3.71	20	\$2.19	2%	100%	\$95.24	1.08	1.21	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.26	25	\$5.48	7%	100%	\$211.34	5.06	5.53	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	Existing	4.32	15	\$1.02	16%	100%	\$33.68	18.94	21.32	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	Existing	58.58	15	\$210.81	39%	100%	\$516.35	49.74	55.13	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	Existing	55.00	15	\$200.86	13%	100%	\$214.83	15.72	17.42	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	1.62	15	\$2.34	5%	100%	\$120.66	1.52	1.63	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	8.80	25	\$22.89	5%	100%	\$258.52	6.53	7.00	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	Existing	79.15	15	\$200.86	13%	100%	\$214.83	22.63	25.08	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.16	15	\$2.34	5%	100%	\$120.66	1.09	1.17	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	2.32	25	\$22.89	5%	100%	\$258.52	1.72	1.85	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	8,382.91	20	\$1,330.55	100%	100%	\$18.66	119.12	127.83	AEG-BEST
Lodging	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	50%	100%	(\$486.83)	33.32	37.45	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	Existing	49.74	8	\$1.09	100%	100%	(\$65.99)	161.78	187.13	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	Existing	252.99	8	\$4.71	100%	100%	(\$5.59)	136.77	156.88	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	80.31	17	\$64.65	100%	100%	\$34.24	63.38	68.12	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	Existing	668.48	15	\$6.29	100%	100%	(\$51.10)	177.38	186.95	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	Existing	54.78	8	\$1.06	100%	100%	(\$43.19)	7.94	8.12	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	103.86	17	\$64.65	100%	100%	\$26.47	2.91	3.12	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	795.03	15	\$157.49	100%	100%	(\$36.55)	716.30	761.51	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	19%	100%	\$361.58	5.66	6.19	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	59%	100%	\$35.66	4.51	5.09	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	59%	100%	\$96.27	2.83	3.09	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Food Preparation	Oven	1 unit	Existing	14,847.2 ₉	10	\$1,104.16	14%	100%	(\$11.26)	16.91	18.79	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	21%	100%	\$66.90	8.84	9.78	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	30%	100%	(\$17.77)	25.14	27.87	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	30%	100%	\$92.54	12.04	12.94	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	Existing	44,174.9 ₇	20	\$142.38	30%	100%	(\$39.12)	86.16	92.92	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	2.29	2.72	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.14	0.16	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.30	0.36	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	100%	10%	\$0.04	1.29	1.49	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	58%	10%	\$0.02	0.19	0.22	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	145.82	7	\$234.00	76%	100%	\$68.32	3.80	3.69	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	489.77	2	\$1.00	27%	100%	\$0.86	0.09	0.11	TBD
Lodging	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	New	3.35	20	\$2.19	2%	100%	\$80.37	0.65	0.71	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.77	25	\$5.48	7%	100%	\$248.67	2.20	2.41	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	New	4.30	15	\$1.02	16%	100%	\$33.87	8.86	9.77	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	New	52.00	15	\$210.81	39%	100%	\$581.64	21.02	22.89	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	New	48.82	15	\$200.86	13%	100%	\$231.07	6.64	7.24	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	New	1.66	15	\$2.34	5%	100%	\$126.13	0.78	0.83	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	New	8.80	25	\$22.89	5%	100%	\$258.52	3.35	3.60	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	New	75.89	15	\$200.86	13%	100%	\$231.07	10.33	11.25	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.00	15	\$2.34	5%	100%	\$126.13	0.47	0.50	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	New	2.32	25	\$22.89	5%	100%	\$258.52	0.88	0.95	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	6,966.03	20	\$1,330.55	100%	100%	\$22.45	67.67	72.75	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Water Heating	Water Heater	1 kBtu/hr	New	1.20	13	\$1.69	50%	100%	(\$486.83)	15.35	16.80	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	New	49.74	8	\$1.09	100%	100%	(\$65.99)	49.01	53.11	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	New	252.99	8	\$4.71	100%	100%	(\$5.59)	36.53	40.63	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	New	80.31	17	\$64.65	100%	100%	\$34.24	22.81	24.43	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	New	668.48	15	\$6.29	100%	100%	(\$51.10)	70.70	74.62	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	New	54.78	8	\$1.06	100%	100%	(\$43.19)	2.76	2.78	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	New	103.86	17	\$64.65	100%	100%	\$26.47	1.05	1.12	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	New	795.03	15	\$157.49	100%	100%	(\$36.55)	339.95	359.10	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	19%	100%	\$361.58	2.62	2.81	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	59%	100%	\$35.66	1.74	1.91	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	59%	100%	\$96.27	1.12	1.20	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Food Preparation	Oven	1 unit	New	14,847.2 ₉	10	\$1,104.16	14%	100%	(\$11.26)	7.68	8.30	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	21%	100%	\$66.90	3.64	3.94	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	30%	100%	(\$17.77)	7.32	7.95	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	30%	100%	\$92.54	6.89	7.35	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	New	44,174.9 ₇	20	\$142.38	30%	100%	(\$39.12)	47.12	50.86	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.71	0.81	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.04	0.05	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.08	0.09	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	100%	10%	\$0.04	0.37	0.42	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	58%	10%	\$0.02	0.06	0.07	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	New	145.82	7	\$234.00	76%	100%	\$68.32	1.57	1.59	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	New	489.77	2	\$1.00	27%	100%	\$0.86	0.01	0.02	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	6.64	15	\$1.02	16%	100%	\$21.93	24.20	27.26	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	Existing	89.97	15	\$210.81	1%	100%	\$336.18	1.69	1.88	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	Existing	84.45	15	\$200.86	0%	100%	\$80.66	0.45	0.50	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	2.04	15	\$2.34	2%	100%	\$55.32	0.62	0.68	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	Existing	272.84	15	\$200.86	0%	100%	\$80.66	1.44	1.60	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	4.02	15	\$2.34	2%	100%	\$55.32	1.23	1.35	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	4,776.74	20	\$1,330.55	100%	100%	\$32.74	57.33	61.55	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	55%	100%	(\$486.83)	3.06	3.44	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	Existing	48.17	8	\$1.09	100%	100%	(\$70.93)	16.49	19.42	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	Existing	25.38	8	\$4.71	100%	100%	(\$55.73)	8.10	9.38	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	27.46	17	\$28.54	100%	100%	\$38.99	39.20	41.14	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	Existing	397.02	15	\$6.29	100%	100%	(\$86.13)	839.75	884.84	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	Existing	55.37	8	\$1.06	100%	100%	(\$41.37)	2.55	2.67	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	109.11	17	\$64.65	100%	100%	\$25.13	10.09	10.84	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	781.53	15	\$157.49	100%	100%	(\$37.47)	161.64	172.57	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	2%	100%	\$361.58	3.54	3.84	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	10%	100%	\$35.66	1.47	1.65	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	10%	100%	\$96.27	0.58	0.63	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	2%	100%	(\$11.26)	1.40	1.54	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	2%	100%	\$66.90	0.15	0.16	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	2%	100%	(\$17.77)	2.17	2.39	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	2%	100%	\$92.54	0.66	0.71	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse	Food Preparation	Steamer	1 unit	Existing	44,174.97	20	\$142.38	2%	100%	(\$39.12)	4.75	5.17	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	2.77	3.29	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.13	0.15	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.37	0.44	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	89%	10%	\$0.04	2.85	3.30	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	77%	10%	\$0.02	0.59	0.69	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	New	4.20	15	\$1.02	16%	100%	\$34.70	8.07	8.90	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	New	78.73	15	\$210.81	1%	100%	\$384.19	0.79	0.86	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	New	73.90	15	\$200.86	0%	100%	\$85.81	0.42	0.40	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	New	1.50	15	\$2.34	2%	100%	\$102.11	0.21	0.23	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	New	228.69	15	\$200.86	0%	100%	\$85.81	1.24	1.18	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.78	15	\$2.34	2%	100%	\$102.11	0.25	0.27	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	3,903.65	20	\$1,330.55	100%	100%	\$40.06	35.22	37.87	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	55%	100%	(\$486.83)	1.77	1.94	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	New	48.17	8	\$1.09	100%	100%	(\$70.93)	5.74	6.28	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	New	25.38	8	\$4.71	100%	100%	(\$55.73)	2.05	2.30	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Linear Lighting	lamps	New	27.46	17	\$28.54	100%	100%	\$38.99	16.35	17.12	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	New	397.02	15	\$6.29	100%	100%	(\$86.13)	446.45	468.58	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	New	55.37	8	\$1.06	100%	100%	(\$41.37)	0.70	0.70	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	109.11	17	\$64.65	100%	100%	\$25.13	4.06	4.35	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	New	781.53	15	\$157.49	100%	100%	(\$37.47)	84.02	89.14	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	2%	100%	\$361.58	1.85	1.97	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	10%	100%	\$35.66	0.64	0.70	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	10%	100%	\$96.27	0.21	0.22	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	2%	100%	(\$11.26)	0.72	0.77	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	2%	100%	\$66.90	0.07	0.07	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	2%	100%	(\$17.77)	0.41	0.45	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	2%	100%	\$92.54	0.43	0.46	COOK_HFCNT-Food Preparation-RTF-v2.3-2

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Warehouse	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	2%	100%	(\$39.12)	2.84	3.04	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.96	1.10	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.04	0.05	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.11	0.12	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	89%	10%	\$0.04	0.93	1.05	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	77%	10%	\$0.02	0.22	0.25	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	14.61	20	\$2.19	15%	100%	\$19.23	3.24	3.58	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	19.80	25	\$7.67	2%	100%	\$69.66	0.46	0.50	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	5.21	15	\$1.02	20%	100%	\$27.98	1.45	1.63	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	Existing	70.51	15	\$210.81	1%	100%	\$428.96	0.09	0.10	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	Existing	66.19	15	\$200.86	0%	100%	\$100.88	0.01	0.01	PTHP-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	1.60	15	\$2.34	2%	100%	\$69.37	0.03	0.03	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	Existing	219.47	15	\$200.86	0%	100%	\$100.88	0.03	0.03	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	3.24	15	\$2.34	2%	100%	\$69.37	0.06	0.06	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	13,459.7 ₉	20	\$1,330.55	100%	100%	\$11.62	10.00	10.73	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBtu/hr	Existing	1.20	13	\$1.69	68%	100%	(\$486.83)	0.37	0.41	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	Existing	48.17	8	\$1.09	100%	100%	(\$70.93)	1.02	1.20	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	Existing	25.38	8	\$4.71	100%	100%	(\$55.73)	0.50	0.58	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	27.46	17	\$28.54	100%	100%	\$38.99	2.43	2.55	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	Existing	397.02	15	\$6.29	100%	100%	(\$86.13)	51.96	54.75	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	Existing	55.37	8	\$1.06	100%	100%	(\$41.37)	0.16	0.17	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	109.11	17	\$64.65	100%	100%	\$25.13	0.62	0.67	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	781.53	15	\$157.49	100%	100%	(\$37.47)	10.00	10.68	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	6,339.49	10	\$333.83	92%	0%	\$9.09	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	2%	100%	\$361.58	1.53	1.66	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

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Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	92%	100%	\$35.66	4.20	4.75	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	92%	100%	\$96.27	1.28	1.40	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	41%	100%	(\$11.26)	0.55	0.62	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	41%	100%	\$66.90	0.26	0.29	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	41%	100%	(\$17.77)	0.44	0.49	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	41%	100%	\$92.54	0.24	0.26	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	41%	100%	(\$39.33)	1.71	1.85	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	0.13	0.15	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.01	0.01	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	0.02	0.02	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	89%	10%	\$0.04	0.13	0.15	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1

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Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	77%	10%	\$0.02	0.03	0.03	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	New	9.36	20	\$2.19	15%	100%	\$30.02	1.09	1.20	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	New	5.50	25	\$5.48	2%	100%	\$80.46	0.12	0.14	AEG BEST
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	3.29	15	\$1.02	20%	100%	\$44.27	0.48	0.53	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	New	61.70	15	\$210.81	1%	100%	\$490.22	0.04	0.05	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	New	57.91	15	\$200.86	0%	100%	\$119.15	0.00	0.00	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	New	1.18	15	\$2.34	2%	100%	\$128.45	0.01	0.01	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	New	183.95	15	\$200.86	0%	100%	\$119.15	0.01	0.01	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.43	15	\$2.34	2%	100%	\$128.45	0.01	0.01	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	10,999.60	20	\$1,330.55	100%	100%	\$14.22	6.14	6.60	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	68%	100%	(\$486.83)	0.21	0.23	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	New	48.17	8	\$1.09	100%	100%	(\$70.93)	0.36	0.39	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	New	25.38	8	\$4.71	100%	100%	(\$55.73)	0.13	0.14	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	27.46	17	\$28.54	100%	100%	\$38.99	1.01	1.06	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	New	397.02	15	\$6.29	100%	100%	(\$86.13)	27.63	29.00	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	New	55.37	8	\$1.06	100%	100%	(\$41.37)	0.04	0.04	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	109.11	17	\$64.65	100%	100%	\$25.13	0.25	0.27	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	781.53	15	\$157.49	100%	100%	(\$37.47)	5.20	5.52	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	6,339.49	10	\$333.83	92%	0%	\$9.09	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	2%	100%	\$361.58	0.80	0.85	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	92%	100%	\$35.66	1.82	1.99	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	92%	100%	\$96.27	0.59	0.63	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	41%	100%	(\$11.26)	0.28	0.30	COOK_OVN-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	41%	100%	\$66.90	0.12	0.13	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	41%	100%	(\$17.77)	0.16	0.17	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	41%	100%	\$92.54	0.15	0.16	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	41%	100%	(\$39.12)	1.02	1.10	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	0.04	0.05	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.00	0.00	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.00	0.01	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	89%	10%	\$0.04	0.04	0.05	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	77%	10%	\$0.02	0.01	0.01	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	15%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	9%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	Existing	0.00	15	\$1.02	48%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	15%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	8%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	15%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	8%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	0.00	20	\$1,330.55	100%	100%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater	1 kBTU/hr	Existing	0.00	13	\$1.69	45%	100%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Interior Lighting	General Service Lighting	lamps	Existing	0.00	8	\$1.09	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	Existing	0.00	8	\$4.71	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	0.00	17	\$64.65	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	Existing	0.00	15	\$6.29	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	Existing	0.00	8	\$1.06	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	0.00	17	\$64.65	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	0.00	15	\$157.49	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$999.69	14%	100%	\$0.00	0.00	0.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	Existing	0.00	9	\$80.91	5%	100%	\$0.00	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	Existing	0.00	10	\$44.23	5%	100%	\$0.00	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Food Preparation	Oven	1 unit	Existing	0.00	10	\$1,104.16	4%	100%	\$0.00	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Fryer	1 unit	Existing	0.00	8	\$814.12	4%	100%	\$0.00	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Dishwasher	1 unit	Existing	0.00	10	\$83.55	4%	100%	\$0.00	0.00	0.00	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	0.00	20	\$882.04	4%	100%	\$0.00	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	4%	100%	\$0.00	0.00	0.00	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	0.00	5	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	Existing	0.00	4	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	Existing	0.00	4	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	Existing	0.00	4	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	Existing	0.00	5	\$0.01	40%	10%	\$0.00	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Data Center	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$18.63	15%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	9%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	New	0.00	15	\$1.02	48%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	15%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	8%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	15%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	8%	100%	\$0.00	0.00	0.00	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	0.00	20	\$1,330.55	100%	100%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater	1 kBTU/hr	New	0.00	13	\$1.69	45%	100%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	New	0.00	8	\$1.09	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	New	0.00	8	\$4.71	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Linear Lighting	lamps	New	0.00	17	\$64.65	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	New	0.00	15	\$6.29	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Exterior Lighting	General Service Lighting	lamps	New	0.00	8	\$1.06	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	New	0.00	17	\$64.65	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	New	0.00	15	\$157.49	100%	100%	\$0.00	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	0.00	10	\$999.69	14%	100%	\$0.00	0.00	0.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	New	0.00	9	\$80.91	5%	100%	\$0.00	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	New	0.00	10	\$44.23	5%	100%	\$0.00	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Food Preparation	Oven	1 unit	New	0.00	10	\$1,104.16	4%	100%	\$0.00	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	New	0.00	8	\$814.12	4%	100%	\$0.00	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Dishwasher	1 unit	New	0.00	10	\$83.55	4%	100%	\$0.00	0.00	0.00	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	New	0.00	20	\$882.04	4%	100%	\$0.00	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Steamer	1 unit	New	0.00	20	\$142.38	4%	100%	\$0.00	0.00	0.00	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	New	0.00	5	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	New	0.00	4	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	New	0.00	4	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	New	0.00	4	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	New	0.00	5	\$0.01	40%	10%	\$0.00	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Data Center	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	5.65	20	\$2.19	10%	100%	\$49.69	48.69	53.87	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	4.36	25	\$5.48	5%	100%	\$126.28	24.88	26.72	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	2.44	15	\$1.02	57%	100%	\$59.59	137.61	155.21	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	3.21	25	\$22.89	1%	100%	\$537.04	1.62	1.74	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	2.14	25	\$22.89	1%	100%	\$537.04	1.08	1.16	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	4,357.63	20	\$1,330.55	100%	100%	\$35.89	227.79	244.73	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	Existing	1.20	13	\$1.69	53%	100%	(\$486.83)	25.85	29.16	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	Existing	82.63	8	\$1.09	100%	100%	(\$46.70)	121.49	153.22	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Exempted Lighting	lamps	Existing	191.11	8	\$4.71	100%	100%	(\$7.33)	120.49	136.98	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	115.62	17	\$64.65	100%	100%	\$23.73	363.72	390.63	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	Existing	757.63	15	\$6.29	100%	100%	(\$45.82)	1,069.32	1,134.66	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	Existing	133.34	8	\$1.06	100%	100%	(\$31.22)	14.02	20.37	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	109.12	17	\$64.65	100%	100%	\$25.14	11.95	12.84	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	908.61	15	\$157.49	100%	100%	(\$32.30)	359.17	383.81	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	448.30	10	\$999.69	12%	100%	\$361.58	10.53	11.51	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	416.31	9	\$80.91	22%	100%	\$35.66	4.62	5.21	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	79.34	10	\$44.23	22%	100%	\$96.27	3.13	3.41	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	Existing	14,847.29	10	\$1,104.16	59%	100%	(\$11.26)	26.94	30.25	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	2,398.85	8	\$814.12	30%	100%	\$66.90	6.92	7.66	COOK_FRY-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	2,168.80	10	\$83.55	15%	100%	(\$17.77)	10.38	11.49	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	1,221.67	20	\$882.04	15%	100%	\$92.54	4.05	4.36	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	44,174.97	20	\$142.38	15%	100%	(\$39.12)	29.27	31.65	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	120.99	5	\$0.01	100%	10%	\$0.02	9.52	11.32	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	36.10	4	\$0.01	100%	10%	\$0.09	0.56	0.65	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	30.03	4	\$0.01	100%	10%	\$0.11	1.27	1.51	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	Existing	75.46	4	\$0.01	66%	10%	\$0.04	4.00	4.62	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	120.99	5	\$0.01	28%	10%	\$0.02	0.38	0.44	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	145.82	7	\$234.00	4%	100%	\$68.32	0.27	0.26	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	489.77	2	\$1.00	1%	100%	\$0.86	0.00	0.01	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	New	5.14	20	\$2.19	10%	100%	\$54.71	29.33	32.12	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.55	25	\$5.48	5%	100%	\$194.00	8.95	9.79	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	0.00	15	\$7.30	57%	100%	\$80.25	58.10	63.07	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	New	3.21	25	\$22.89	1%	100%	\$537.04	1.08	1.16	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	New	2.14	25	\$22.89	1%	100%	\$537.04	0.72	0.77	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	4,110.22	20	\$1,330.55	100%	100%	\$38.05	181.75	195.55	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	New	1.20	13	\$1.69	53%	100%	(\$486.83)	14.35	15.72	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	New	82.63	8	\$1.09	100%	100%	(\$46.70)	49.05	55.96	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Exempted Lighting	lamps	New	191.11	8	\$4.71	100%	100%	(\$7.33)	40.45	44.64	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	115.62	17	\$64.65	100%	100%	\$23.73	169.76	181.68	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	New	757.63	15	\$6.29	100%	100%	(\$45.82)	623.10	658.98	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	New	133.34	8	\$1.06	100%	100%	(\$31.22)	4.42	5.72	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	109.12	17	\$64.65	100%	100%	\$25.14	5.58	5.97	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	908.61	15	\$157.49	100%	100%	(\$32.30)	196.29	209.30	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	448.30	10	\$999.69	12%	100%	\$361.58	6.65	7.12	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	New	416.31	9	\$80.91	22%	100%	\$35.66	2.36	2.58	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	79.34	10	\$44.23	22%	100%	\$96.27	1.52	1.63	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	New	14,847.29	10	\$1,104.16	59%	100%	(\$11.26)	15.63	17.01	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	New	2,398.85	8	\$814.12	30%	100%	\$66.90	3.77	4.08	COOK_FRY-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Dishwasher	1 unit	New	2,168.80	10	\$83.55	15%	100%	(\$17.77)	3.45	3.73	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	1,221.67	20	\$882.04	15%	100%	\$92.54	3.32	3.54	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Food Preparation	Steamer	1 unit	New	44,174.97	20	\$142.38	15%	100%	(\$39.12)	22.49	24.24	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	120.99	5	\$0.01	100%	10%	\$0.02	3.83	4.37	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	New	36.10	4	\$0.01	100%	10%	\$0.09	0.22	0.25	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	New	30.03	4	\$0.01	100%	10%	\$0.11	0.42	0.49	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	New	75.46	4	\$0.01	66%	10%	\$0.04	1.52	1.71	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	120.99	5	\$0.01	28%	10%	\$0.02	0.16	0.18	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	145.82	7	\$234.00	4%	100%	\$68.32	0.15	0.15	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	489.77	2	\$1.00	1%	100%	\$0.86	0.00	0.00	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.07	45	\$0.84	15%	35%	\$83.56	0.26	0.30	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	1.08	45	\$0.84	15%	35%	\$83.56	2.06	2.33	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$83.56	0.04	0.04	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.13	20	\$0.86	15%	35%	\$889.08	0.69	0.79	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$889.08	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$889.08	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.44	20	\$0.81	45%	50%	\$9,999.00	0.39	0.45	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.54	20	\$0.81	45%	50%	\$9,999.00	-0.26	-0.29	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.34	20	\$0.81	45%	50%	\$9,999.00	-0.32	-0.37	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.24	45	\$1.70	15%	35%	\$79.25	-0.71	-0.82	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.69	45	\$1.70	15%	35%	\$79.25	2.75	3.11	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	1.05	45	\$1.70	15%	35%	\$79.25	3.41	3.94	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	5.30	18	\$0.59	15%	50%	\$9,999.00	0.28	0.32	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.72	18	\$0.59	15%	50%	\$9,999.00	-0.28	-0.31	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.04	18	\$0.59	15%	50%	\$9,999.00	-0.34	-0.40	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.93	30	\$37.07	48%	48%	\$139.62	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	19.86	30	\$37.07	48%	48%	\$139.62	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.11	30	\$37.07	48%	48%	\$139.62	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,080.42	10	\$914.46	15%	75%	\$53.02	0.41	0.49	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	374.24	15	\$248.07	15%	75%	\$98.35	6.86	8.24	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	796.18	15	\$263.92	15%	75%	\$49.18	1.46	1.75	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	22.58	15	\$248.07	15%	75%	\$1,599.12	0.16	0.19	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	27,195.74	10	\$1,796.53	15%	75%	\$32.32	1.42	1.66	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	110.89	5	\$267.96	18%	75%	\$663.20	5.83	7.00	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.30	15	\$0.05	5%	15%	\$25.36	1.72	2.11	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.06	14	\$5.25	3%	75%	\$195.05	8.23	9.79	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.57	15	\$0.26	15%	20%	\$67.97	1.62	1.88	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	781.58	15	\$189.00	13%	25%	\$36.42	2.10	2.59	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	281.65	15	\$1,273.23	13%	50%	\$680.79	2.38	2.93	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.37	15	\$0.07	13%	50%	\$30.18	8.36	10.31	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	22%	30%	\$1,025.16	0.16	0.20	VENT_DCV-Ventilation-7PLN-v5-5
Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.77	15	\$0.76	7%	10%	\$56.47	0.62	0.73	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.24	15	\$0.76	7%	10%	\$56.47	1.99	2.45	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,289.02	15	\$7,501.21	15%	30%	\$81.74	2.44	2.99	HVLS-Cooling-AEG-1

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Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,191.01	15	\$7,501.21	15%	30%	\$81.74	4.11	4.89	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	0.21	0.26	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	Existing	310.23	15	\$410.87	15%	45%	\$195.00	7.06	8.03	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	167.21	15	\$698.92	15%	75%	\$615.42	7.34	8.14	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	253.53	20	\$1,370.94	15%	25%	\$276.88	0.10	0.12	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	395.84	20	\$1,370.94	15%	25%	\$276.88	1.76	2.02	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.48	5	\$0.75	30%	40%	\$120.53	2.53	2.91	STAT_WIFI-All-7PLN-v2-1
Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	30%	40%	\$120.53	2.20	2.48	STAT_WIFI-All-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.48	5	\$0.75	30%	40%	\$120.53	2.72	3.14	STAT_WIFI-All-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	139.38	10	\$8.63	25%	65%	\$11.01	0.40	0.48	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	153.16	10	\$17.56	25%	65%	(\$115.98)	0.22	0.26	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	30.26	10	\$16.82	25%	65%	(\$191.39)	0.04	0.05	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	619.87	11	\$37.97	15%	20%	\$10.53	0.25	0.29	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	566.77	15	\$15.38	16%	75%	\$4.01	0.98	1.17	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	644.38	4	\$75.87	25%	40%	(\$99.49)	0.68	0.81	DHW_SPR-Water Heating-RTF-v2.4-1

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Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	100.10	2	\$5.13	15%	75%	\$29.18	0.53	0.64	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.68	20	\$258.33	1%	30%	\$2,689.23	1.69	2.03	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.37	15	\$0.36	3%	23%	\$165.18	4.84	6.08	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.51	15	\$0.60	3%	23%	\$194.68	6.77	8.51	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	139.40	15	\$56.14	1%	3%	\$69.60	0.13	0.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	49.61	15	\$65.99	1%	3%	\$229.90	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,565.94	11	\$26.48	15%	30%	\$2.16	1.70	2.69	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	262.75	16	\$1,864.95	5%	15%	\$1,241.12	1.16	1.84	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.58	9	\$0.65	15%	25%	\$82.33	3.78	4.84	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	101.02	8	\$56.85	15%	25%	\$121.12	2.01	2.57	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	126.31	7	\$3,486.31	15%	30%	\$6,473.25	3.77	4.83	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	19.82	12	\$50.74	0%	0%	\$426.93	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	4.77	4	\$24.51	0%	0%	\$1,688.36	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	29.31	15	\$347.21	0%	0%	\$1,821.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	24.33	2	\$10.74	0%	0%	\$376.42	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.73	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	12.73	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	92.06	15	\$305.13	0%	0%	\$1,052.83	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	368.66	15	\$539.09	0%	0%	\$224.81	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	774.56	10	\$449.00	0%	0%	\$107.28	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	44.54	16	\$153.90	0%	0%	\$513.72	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	16.02	15	\$135.00	0%	0%	\$1,288.16	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	170.04	16	\$105.92	0%	0%	\$97.55	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	130.90	10	\$521.11	0%	0%	\$771.50	0.00	0.00	RFG_DDEF-Refrigeration-VITRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	78.02	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	156.93	12	\$605.15	0%	0%	\$658.90	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	8.85	8	\$15.90	0%	0%	\$371.41	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.91	8	\$3.87	0%	0%	\$877.01	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.21	5	\$49.37	0%	0%	\$4,307.65	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,592.05	5	\$288.64	25%	75%	\$50.86	0.41	0.49	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	7,586.56	18	\$8,815.42	25%	50%	\$162.42	4.36	5.04	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	173.19	15	\$335.00	0%	0%	\$112.02	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	265.92	15	\$335.00	0%	0%	\$112.02	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	114.94	4	\$37.32	10%	50%	\$97.40	6.92	7.36	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.05	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.05	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$7.87	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	8,147.69	18	\$4,231.40	0%	0%	\$72.59	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.83	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	140.65	7	\$423.28	0%	0%	(\$676.03)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$676.03)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$676.03)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	21,601.26	15	\$1,114.41	0%	0%	\$7.62	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$7.62	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	9,073.61	6	\$37.07	1%	3%	\$0.97	0.82	0.91	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.05	20	\$0.53	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.60	25	\$4.24	0%	0%	\$139.42	0.00	0.00	ADVNC-All-RSRCH-1

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Large Office	Heating	Advanced New Construction Designs	sqft	Existing	1.39	25	\$4.24	0%	0%	\$139.42	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.24	0%	0%	\$139.42	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$139.42	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.72	25	\$4.24	0%	0%	\$139.42	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.24	0%	0%	\$139.42	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.79	3%	14%	\$381.78	0.82	1.01	COM_SEM-HVAC-AEG-1
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.79	3%	14%	\$381.78	0.71	0.85	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.79	3%	14%	\$381.78	0.88	1.09	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.79	3%	14%	\$381.78	0.14	0.17	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.79	3%	14%	\$381.78	0.66	0.96	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$0.79	3%	14%	\$381.78	0.41	0.53	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.79	3%	14%	\$381.78	0.07	0.08	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.15	3	\$0.79	3%	14%	\$381.78	1.25	1.33	COM_SEM-Office Equipment-AEG-1
Large Office	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.76	0%	0%	\$352.41	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	Existing	0.29	3	\$0.76	0%	0%	\$352.41	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	Existing	0.18	3	\$0.76	0%	0%	\$352.41	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.76	0%	0%	\$352.41	0.00	0.00	COM_CX-Water Heating-AEG-1

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Large Office	Interior Lighting	Commissioning	sqft	Existing	0.14	3	\$0.76	0%	0%	\$352.41	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.07	3	\$0.76	0%	0%	\$352.41	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.76	0%	0%	\$352.41	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.18	3	\$0.24	14%	61%	\$111.85	4.86	5.96	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	Existing	0.29	3	\$0.24	14%	61%	\$111.85	4.23	5.03	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.24	14%	61%	\$111.85	5.23	6.45	COM_RCX-HVAC-AEG-1
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.24	14%	61%	\$111.85	0.27	0.33	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.24	14%	61%	\$111.85	3.24	4.73	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$0.24	14%	61%	\$111.85	2.02	2.59	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.24	14%	61%	\$111.85	0.73	0.81	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$184.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.07	10	\$1.12	0%	0%	\$2,830.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.24	0%	0%	\$5,293.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Office	Miscellaneous	LED Signage	perBldg	Existing	106.51	16	\$75.53	20%	75%	\$99.13	0.12	0.14	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	13,448.21	25	\$20,242.59	0%	75%	\$171.82	6.27	6.46	WHP Analysis
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$222.76	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.43	45	\$0.84	15%	50%	\$222.76	0.38	0.41	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$222.76	0.01	0.01	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.18	20	\$0.86	15%	50%	\$622.11	0.47	0.50	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$622.11	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$622.11	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.81	45%	50%	\$9,999.00	0.02	0.02	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.22	20	\$0.81	45%	50%	\$9,999.00	-0.03	-0.03	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.81	45%	50%	\$9,999.00	-0.03	-0.03	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$314.68	-0.01	-0.01	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.41	45	\$1.70	15%	50%	\$314.68	0.31	0.34	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.21	45	\$1.70	15%	50%	\$314.68	0.35	0.37	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	12.55	18	\$0.59	15%	35%	\$2.44	0.10	0.11	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	12.84	18	\$0.59	15%	35%	\$2.44	0.05	0.06	Building Energy Simulation Tool

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Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.75	18	\$0.59	15%	35%	\$2.44	0.06	0.07	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.31	30	\$37.07	66%	66%	\$144.78	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	20.45	30	\$37.07	66%	66%	\$144.78	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.19	30	\$37.07	66%	66%	\$144.78	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,761.23	10	\$914.46	15%	75%	\$56.55	0.05	0.06	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	335.46	15	\$248.07	15%	75%	\$104.90	1.01	1.15	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	713.68	15	\$263.92	15%	75%	\$52.46	0.21	0.24	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	27.15	15	\$248.07	15%	75%	\$1,268.75	0.03	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	23,444.61	10	\$1,796.53	15%	75%	\$35.77	0.16	0.18	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	80.44	5	\$267.96	18%	75%	\$890.29	0.32	0.38	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.22	15	\$0.05	10%	15%	\$33.49	0.10	0.12	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.17	14	\$5.25	6%	75%	\$187.10	1.24	1.43	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.49	15	\$0.26	15%	20%	\$74.54	0.36	0.39	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	721.31	15	\$189.00	19%	25%	\$37.64	0.14	0.17	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	259.93	15	\$1,273.23	19%	50%	\$703.63	0.29	0.33	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.32	15	\$0.07	19%	50%	\$31.20	1.01	1.16	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	22%	30%	\$1,124.30	0.02	0.03	VENT_DCV-Ventilation-7PLN-v5-5
Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.78	15	\$0.70	7%	10%	\$76.39	0.10	0.11	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.54	15	\$0.70	7%	10%	\$76.39	0.14	0.17	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,388.58	15	\$7,501.21	15%	30%	\$83.90	0.29	0.34	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,491.87	15	\$7,501.21	15%	30%	\$83.90	0.67	0.76	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	New	5.47	3	\$33.20	15%	45%	\$2,424.78	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	New	200.60	15	\$410.87	15%	45%	\$296.91	1.16	1.28	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	108.12	15	\$698.92	15%	75%	\$937.05	1.44	1.56	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	200.80	20	\$1,370.94	15%	25%	\$268.94	0.02	0.02	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	453.59	20	\$1,370.94	15%	25%	\$268.94	0.39	0.44	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$129.80	0.16	0.18	STAT_WIFI-AII-7PLN-v2-1
Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.79	5	\$0.75	30%	40%	\$129.80	0.18	0.21	STAT_WIFI-AII-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.41	5	\$0.75	30%	40%	\$129.80	0.20	0.23	STAT_WIFI-AII-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	44.41	10	\$8.63	25%	65%	\$33.61	0.04	0.05	DHW_AER-Water Heating-ILTRM-v4.0-1

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Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	48.80	10	\$17.56	25%	65%	(\$354.01)	0.02	0.03	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	9.64	10	\$16.82	25%	65%	(\$584.16)	0.01	0.01	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	15%	20%	\$10.71	0.05	0.05	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	541.73	15	\$15.38	1%	75%	\$4.08	0.19	0.21	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	205.30	4	\$75.87	25%	40%	(\$303.68)	0.04	0.05	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.02	0.02	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kWh	New	12.12	20	\$258.33	1%	30%	\$2,736.09	0.27	0.30	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.35	15	\$0.36	11%	23%	\$151.56	1.66	1.90	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.49	15	\$0.60	11%	23%	\$178.63	2.32	2.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	132.92	15	\$56.14	1%	3%	\$65.11	0.02	0.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	0.00	15	\$65.99	1%	3%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,540.26	11	\$26.48	15%	30%	\$1.81	0.30	0.39	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	260.12	16	\$1,864.95	5%	15%	\$1,042.40	0.24	0.31	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.46	9	\$0.65	15%	25%	\$84.25	0.44	0.53	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	93.41	8	\$56.85	15%	25%	\$123.94	0.22	0.26	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	116.80	7	\$3,486.31	15%	30%	\$6,623.84	0.37	0.45	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	18.66	12	\$50.74	0%	0%	\$434.11	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.41	4	\$24.51	0%	0%	\$1,741.35	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	27.49	15	\$347.21	0%	0%	\$1,850.42	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	19.64	2	\$10.74	0%	0%	\$434.59	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.68	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	11.94	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	86.35	15	\$305.13	0%	0%	\$1,069.71	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	345.80	15	\$539.09	0%	0%	\$228.42	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	726.52	10	\$449.00	0%	0%	\$109.00	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	41.66	16	\$153.90	0%	0%	\$524.85	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

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Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	14.98	15	\$135.00	0%	0%	\$1,316.06	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	149.50	16	\$105.92	0%	0%	\$104.61	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	115.09	10	\$521.11	0%	0%	\$827.32	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.25	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	147.19	12	\$5,648.09	0%	0%	\$6,248.27	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.30	8	\$15.90	0%	0%	\$378.12	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.86	8	\$3.87	0%	0%	\$892.86	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.01	5	\$49.37	0%	0%	\$4,386.39	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,486.43	5	\$288.64	25%	75%	\$51.89	0.03	0.03	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	6,598.29	18	\$8,815.42	25%	50%	\$178.12	1.05	1.13	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	137.18	15	\$335.00	0%	0%	\$109.25	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	303.44	15	\$335.00	0%	0%	\$109.25	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	112.27	4	\$37.32	10%	50%	\$99.10	0.41	0.44	SMARTSTRIP-Electronics-RTF-v3.2-1

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Large Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.05	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$4.30	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	7,086.32	18	\$4,231.40	0%	0%	\$79.61	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.76	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	134.44	7	\$423.28	0%	0%	(\$687.81)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$687.81)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$687.81)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	20,646.77	15	\$1,114.41	0%	0%	\$7.76	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$7.76	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,024.54	6	\$37.07	1%	3%	\$2.90	0.11	0.12	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.05	20	\$0.47	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	New	0.61	25	\$4.24	10%	30%	\$131.23	1.29	1.38	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	New	1.38	25	\$4.24	10%	30%	\$131.23	1.51	1.62	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.73	25	\$4.24	10%	30%	\$131.23	1.68	1.79	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	30%	\$131.23	0.28	0.30	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.76	25	\$4.24	10%	30%	\$131.23	6.09	6.82	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.38	25	\$4.24	10%	30%	\$131.23	2.50	2.72	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	New	0.09	3	\$0.66	3%	14%	\$328.46	0.03	0.04	COM_SEM-HVAC-AEG-1
Large Office	Heating	Strategic Energy Management	sqft	New	0.21	3	\$0.66	3%	14%	\$328.46	0.04	0.04	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.66	3%	14%	\$328.46	0.04	0.05	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.66	3%	14%	\$328.46	0.01	0.01	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.66	3%	14%	\$328.46	0.04	0.05	COM_SEM-Lighting-AEG-1

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Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.66	3%	14%	\$328.46	0.02	0.02	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.66	3%	14%	\$328.46	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.15	3	\$0.66	3%	14%	\$328.46	0.06	0.06	COM_SEM-Office Equipment-AEG-1
Large Office	Cooling	Commissioning	sqft	New	0.13	3	\$0.61	14%	61%	\$298.24	1.00	1.10	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	New	0.30	3	\$0.61	14%	61%	\$298.24	1.17	1.29	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	New	0.16	3	\$0.61	14%	61%	\$298.24	1.30	1.43	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.61	14%	61%	\$298.24	0.07	0.08	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.61	14%	61%	\$298.24	3.93	4.61	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$0.61	14%	61%	\$298.24	1.62	1.82	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.61	14%	61%	\$298.24	0.57	0.60	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	New	0.13	3	\$0.20	0%	0%	\$94.66	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	New	0.30	3	\$0.20	0%	0%	\$94.66	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	New	0.16	3	\$0.20	0%	0%	\$94.66	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.20	0%	0%	\$94.66	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.20	0%	0%	\$94.66	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.20	0%	0%	\$94.66	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.20	0%	0%	\$94.66	0.00	0.00	COM_RCX-Refrigeration-AEG-1

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Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.09	10	\$0.09	0%	0%	\$172.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.06	10	\$1.12	0%	0%	\$2,946.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.02	3	\$0.24	0%	0%	\$5,510.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	New	106.51	16	\$75.53	20%	75%	\$99.13	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	13,239.56	25	\$20,201.66	0%	75%	\$175.52	1.60	1.64	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.10	45	\$0.84	15%	35%	\$175.26	44.89	51.84	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.43	45	\$0.84	15%	35%	\$175.26	96.74	109.73	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$175.26	12.65	14.31	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.23	20	\$0.86	15%	35%	\$502.25	24.88	28.73	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$502.25	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$502.25	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.81	45%	50%	\$9,999.00	36.36	41.98	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.29	20	\$0.81	45%	50%	\$9,999.00	-16.12	-18.29	Building Energy Simulation Tool

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Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$9,999.00	-7.54	-8.53	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.17	45	\$1.70	15%	35%	\$114.59	-27.36	-31.60	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.56	45	\$1.70	15%	35%	\$114.59	128.99	146.30	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.33	45	\$1.70	15%	35%	\$114.59	60.34	68.24	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.61	18	\$0.59	15%	50%	\$9,999.00	7.77	8.97	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-10.81	18	\$0.59	15%	50%	\$9,999.00	-12.16	-13.79	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.28	18	\$0.59	15%	50%	\$9,999.00	-5.69	-6.43	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.16	30	\$37.07	48%	48%	\$178.10	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	18.36	30	\$37.07	48%	48%	\$178.10	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.23	30	\$37.07	48%	48%	\$178.10	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	125.57	5	\$267.96	18%	75%	\$584.25	271.25	326.01	AEG-BEST

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Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.34	15	\$0.05	5%	15%	\$22.59	79.15	97.37	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.84	14	\$5.25	3%	75%	\$164.36	385.72	461.79	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.23	15	\$0.26	15%	20%	\$163.41	28.74	32.51	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	311.53	15	\$189.00	13%	25%	\$88.94	37.21	44.38	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	112.26	15	\$1,273.23	13%	25%	\$1,662.64	13.41	15.99	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.15	15	\$0.07	13%	25%	\$73.71	47.12	56.20	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	2%	56%	\$2,464.60	19.97	23.82	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.92	15	\$0.76	1%	19%	\$78.80	201.09	240.76	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.50	15	\$0.76	1%	19%	\$78.80	244.30	291.41	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,697.02	15	\$7,501.21	15%	15%	\$69.78	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,162.69	15	\$7,501.21	15%	15%	\$69.78	0.00	0.00	HVLS-Heating-AEG-1
Small Office	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	12.97	15.76	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	Existing	342.51	15	\$410.87	15%	45%	\$176.62	479.38	544.74	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	184.61	15	\$698.92	15%	75%	\$557.43	498.31	552.23	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	274.18	20	\$1,370.94	15%	75%	\$241.57	25.02	31.61	DHP-Cooling/Heating-7PLN-v2-1

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Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	480.59	20	\$1,370.94	15%	75%	\$241.57	493.07	565.56	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.54	5	\$0.75	30%	40%	\$125.67	116.00	133.96	STAT_WIFI-All-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.91	5	\$0.75	30%	40%	\$125.67	102.89	116.70	STAT_WIFI-All-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.19	5	\$0.75	30%	40%	\$125.67	48.13	54.44	STAT_WIFI-All-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	25.09	10	\$8.63	25%	65%	\$61.17	19.75	23.91	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	27.57	10	\$17.56	25%	65%	(\$644.23)	10.85	13.14	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	5.45	10	\$16.82	25%	65%	(\$1,063.05)	2.11	2.53	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	619.87	11	\$37.97	0%	0%	\$10.53	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	102.21	15	\$15.38	16%	75%	\$22.24	48.92	58.50	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	116.01	4	\$75.87	25%	40%	(\$552.64)	33.77	40.38	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	100.10	2	\$5.13	15%	75%	\$29.18	26.55	31.75	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.69	20	\$258.33	1%	30%	\$2,687.70	84.58	101.14	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.41	15	\$0.36	3%	23%	\$146.06	230.37	287.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.58	15	\$0.60	3%	23%	\$172.14	322.51	401.84	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	93.32	15	\$56.14	1%	3%	\$102.79	6.27	9.29	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	49.79	15	\$65.99	1%	3%	\$226.46	0.41	0.61	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,271.79	11	\$26.48	15%	30%	\$2.49	60.16	98.19	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	232.63	16	\$1,864.95	5%	15%	\$1,434.87	41.07	67.03	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	3.56	9	\$0.65	15%	25%	\$36.10	188.20	237.42	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	126.03	8	\$56.85	15%	25%	\$96.29	100.03	126.19	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	157.58	7	\$3,486.31	15%	30%	\$5,146.48	187.61	236.68	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	19.35	12	\$50.74	0%	0%	\$418.65	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.08	4	\$24.51	0%	0%	\$1,538.88	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	13.88	15	\$347.21	0%	0%	\$3,290.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	22.18	2	\$10.74	0%	0%	\$389.69	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.34	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	6.03	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4

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Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	43.60	15	\$305.13	0%	0%	\$1,902.05	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	174.62	15	\$539.09	0%	0%	\$406.15	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	366.87	10	\$449.00	0%	0%	\$193.81	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	134.80	16	\$105.92	0%	0%	\$109.14	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	103.77	10	\$521.11	0%	0%	\$863.16	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	71.13	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	74.33	12	\$605.15	0%	0%	\$1,190.36	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.12	5	\$49.37	0%	0%	\$4,230.17	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,699.60	5	\$288.64	25%	75%	\$47.34	7.81	9.25	VEND_CTRL-Miscellaneous-SCE-17R0-42
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,071.82	18	\$8,815.42	25%	50%	\$390.47	77.20	87.30	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	187.30	15	\$335.00	0%	0%	\$97.93	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	322.48	15	\$335.00	0%	0%	\$97.93	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	71.39	4	\$37.32	10%	50%	\$153.32	187.33	192.81	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.08	5	\$0.01	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.26	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.26	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$2.26	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$6.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	659.80	18	\$4,231.40	0%	0%	\$872.58	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.82	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	25.32	7	\$423.28	0%	0%	(\$3,754.99)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$3,754.99)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$3,754.99)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	3,888.96	15	\$1,114.41	0%	0%	\$334.75	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$334.75	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,518.49	6	\$37.07	1%	3%	\$5.77	28.75	31.61	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.04	20	\$0.42	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.60	25	\$4.24	0%	0%	\$151.57	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Heating	Advanced New Construction Designs	sqft	Existing	1.38	25	\$4.24	0%	0%	\$151.57	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$151.57	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.24	0%	0%	\$151.57	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.81	25	\$4.24	0%	0%	\$151.57	0.00	0.00	ADVNC-AII-RSRCH-1

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Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.44	25	\$4.24	0%	0%	\$151.57	0.00	0.00	ADVNC-All-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.68	3%	14%	\$351.67	37.73	46.41	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.68	3%	14%	\$351.67	33.46	40.06	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.68	3%	14%	\$351.67	15.65	18.67	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.68	3%	14%	\$351.67	6.95	8.31	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.14	3	\$0.68	3%	14%	\$351.67	31.27	44.99	COM_SEM-Lighting-AEG-1
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.68	3%	14%	\$351.67	20.42	25.76	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.68	3%	14%	\$351.67	2.15	1.19	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.09	3	\$0.68	3%	14%	\$351.67	33.73	34.72	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	Existing	0.20	3	\$0.76	0%	0%	\$355.19	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	Existing	0.34	3	\$0.76	0%	0%	\$355.19	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.76	0%	0%	\$355.19	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.76	0%	0%	\$355.19	0.00	0.00	COM_CX-Water Heating-AEG-1
Small Office	Interior Lighting	Commissioning	sqft	Existing	0.16	3	\$0.76	0%	0%	\$355.19	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.76	0%	0%	\$355.19	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.76	0%	0%	\$355.19	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.20	3	\$0.24	14%	61%	\$112.74	223.19	274.59	COM_RCX-HVAC-AEG-1

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Small Office	Heating	Retrocommissioning	sqft	Existing	0.34	3	\$0.24	14%	61%	\$112.74	197.96	237.01	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.24	14%	61%	\$112.74	92.61	110.47	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.24	14%	61%	\$112.74	13.70	16.38	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.16	3	\$0.24	14%	61%	\$112.74	154.17	221.78	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.24	14%	61%	\$112.74	100.68	127.01	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.24	14%	61%	\$112.74	21.20	11.70	COM_RCX-Refrigeration-AEG-1
Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.11	10	\$0.09	0%	0%	\$163.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.02	10	\$1.12	0%	0%	\$6,084.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Miscellaneous	LED Signage	perBldg	Existing	104.49	16	\$75.53	20%	75%	\$101.04	24.03	28.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,945.14	25	\$4,533.73	0%	75%	\$186.66	193.69	208.10	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$319.31	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.30	45	\$0.84	15%	50%	\$319.31	32.00	34.56	Building Energy Simulation Tool

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Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$319.31	0.42	0.45	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.31	20	\$0.86	15%	50%	\$364.76	16.27	17.58	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$364.76	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$364.76	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.81	45%	50%	\$9,999.00	1.82	1.97	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.12	20	\$0.81	45%	50%	\$9,999.00	-1.84	-1.99	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.81	45%	50%	\$9,999.00	-0.88	-0.95	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$3,056.86	-0.91	-0.99	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$3,056.86	2.43	2.62	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$3,056.86	1.16	1.26	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	14.24	18	\$0.59	15%	35%	\$1.65	4.77	5.17	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	27.65	18	\$0.59	15%	35%	\$1.65	4.68	5.07	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	5.95	18	\$0.59	15%	35%	\$1.65	2.24	2.42	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.21	30	\$37.07	66%	66%	\$215.91	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	15.65	30	\$37.07	66%	66%	\$215.91	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.94	30	\$37.07	66%	66%	\$215.91	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	75.52	5	\$267.96	18%	75%	\$956.44	12.31	14.66	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.21	15	\$0.05	10%	15%	\$35.07	4.03	4.64	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.13	14	\$5.25	6%	75%	\$189.62	48.58	55.93	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	15	\$0.26	15%	20%	\$184.58	6.05	6.57	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	290.21	15	\$189.00	19%	25%	\$93.54	2.43	2.79	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	104.58	15	\$1,273.23	19%	25%	\$1,748.68	0.88	1.01	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.13	15	\$0.07	19%	25%	\$77.53	3.08	3.53	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	2%	56%	\$2,783.90	2.75	3.15	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.77	15	\$0.76	1%	19%	\$110.69	26.88	30.88	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.22	15	\$0.76	1%	19%	\$110.69	16.91	19.38	HVAC_DOAS-Heating-7PLN-v5-1

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Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,298.70	15	\$7,501.21	15%	15%	\$85.54	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,366.37	15	\$7,501.21	15%	15%	\$85.54	0.00	0.00	HVLS-Heating-AEG-1
Small Office	Cooling	RTU - Maintenance	tonCool	New	5.08	3	\$33.20	15%	45%	\$2,607.00	0.32	0.39	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	New	206.00	15	\$410.87	15%	45%	\$289.13	73.06	80.83	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	111.03	15	\$698.92	15%	75%	\$912.52	91.04	98.53	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	197.06	20	\$1,370.94	15%	75%	\$272.20	4.07	4.61	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	449.50	20	\$1,370.94	15%	75%	\$272.20	87.92	99.47	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.33	5	\$0.75	30%	40%	\$157.55	6.14	7.01	STAT_WIFI-AII-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	30%	40%	\$157.55	7.22	8.23	STAT_WIFI-AII-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.17	5	\$0.75	30%	40%	\$157.55	3.46	3.93	STAT_WIFI-AII-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	23.99	10	\$8.63	25%	65%	\$62.24	2.10	2.46	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	26.36	10	\$17.56	25%	65%	(\$655.46)	1.15	1.35	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	5.21	10	\$16.82	25%	65%	(\$1,081.57)	0.26	0.30	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	0%	0%	\$10.71	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	97.69	15	\$15.38	1%	75%	\$22.62	9.34	10.71	AEG-BEST

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Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	110.88	4	\$75.87	25%	40%	(\$562.27)	2.05	2.43	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.86	1.03	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Office	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.13	20	\$258.33	1%	30%	\$2,734.53	13.24	15.15	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.39	15	\$0.36	11%	23%	\$136.26	77.21	88.11	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.55	15	\$0.60	11%	23%	\$160.59	108.09	123.35	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	88.44	15	\$56.14	1%	3%	\$97.40	0.93	1.17	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	51.87	15	\$65.99	1%	3%	\$195.21	0.06	0.08	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,270.58	11	\$26.48	15%	30%	\$2.03	11.09	14.40	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	232.50	16	\$1,864.95	5%	15%	\$1,166.67	9.08	11.54	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	3.28	9	\$0.65	15%	25%	\$37.44	21.65	25.80	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	115.88	8	\$56.85	15%	25%	\$99.87	10.56	12.64	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	144.90	7	\$3,486.31	15%	30%	\$5,337.39	18.02	21.65	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	17.42	12	\$50.74	0%	0%	\$465.17	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1

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Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.67	4	\$24.51	0%	0%	\$1,596.43	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	12.77	15	\$347.21	0%	0%	\$3,457.30	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	16.79	2	\$10.74	0%	0%	\$485.12	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.32	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	5.54	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	40.10	15	\$305.13	0%	0%	\$1,998.63	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	160.57	15	\$539.09	0%	0%	\$426.77	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	337.37	10	\$449.00	0%	0%	\$203.65	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	122.81	16	\$105.92	0%	0%	\$114.87	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	94.54	10	\$521.11	0%	0%	\$908.47	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1

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Small Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.92	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	68.35	12	\$5,648.09	0%	0%	\$9,999.00	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.81	5	\$49.37	0%	0%	\$4,700.19	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,606.41	5	\$288.64	25%	75%	\$48.01	0.43	0.51	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,664.49	18	\$8,815.42	25%	50%	\$441.05	17.67	19.11	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	134.62	15	\$335.00	0%	0%	\$110.44	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	301.23	15	\$335.00	0%	0%	\$110.44	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	69.49	4	\$37.32	10%	50%	\$158.04	10.88	11.51	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.98	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.98	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$1.98	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$3.07	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	572.31	18	\$4,231.40	0%	0%	\$985.63	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.74	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	24.20	7	\$423.28	0%	0%	(\$3,820.42)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$3,820.42)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$3,820.42)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	3,717.12	15	\$1,114.41	0%	0%	\$340.58	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$340.58	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,518.49	6	\$37.07	1%	3%	\$5.77	3.70	4.05	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.04	20	\$0.38	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	New	0.59	25	\$4.24	10%	25%	\$144.13	37.67	40.43	ADVNC-AII-RSRCH-1
Small Office	Heating	Advanced New Construction Designs	sqft	New	1.37	25	\$4.24	10%	25%	\$144.13	44.32	47.51	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$144.13	21.23	22.74	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.24	25	\$4.24	10%	25%	\$144.13	10.42	11.17	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.84	25	\$4.24	10%	25%	\$144.13	213.35	238.18	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.44	25	\$4.24	10%	25%	\$144.13	91.88	99.27	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	New	0.09	3	\$0.48	3%	14%	\$284.73	1.17	1.41	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	New	0.21	3	\$0.48	3%	14%	\$284.73	1.38	1.65	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.48	3%	14%	\$284.73	0.66	0.79	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.48	3%	14%	\$284.73	0.32	0.39	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.13	3	\$0.48	3%	14%	\$284.73	1.66	2.20	COM_SEM-Lighting-AEG-1
Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.48	3%	14%	\$284.73	0.95	1.17	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.48	3%	14%	\$284.73	0.08	0.04	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.09	3	\$0.48	3%	14%	\$284.73	1.51	1.60	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	New	0.13	3	\$0.51	14%	61%	\$279.70	38.89	43.01	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	New	0.29	3	\$0.51	14%	61%	\$279.70	45.74	50.51	COM_CX-HVAC-AEG-1

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Small Office	Ventilation	Commissioning	sqft	New	0.06	3	\$0.51	14%	61%	\$279.70	21.92	24.16	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.51	14%	61%	\$279.70	3.59	3.95	COM_CX-Water Heating-AEG-1
Small Office	Interior Lighting	Commissioning	sqft	New	0.15	3	\$0.51	14%	61%	\$279.70	183.53	214.53	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$0.51	14%	61%	\$279.70	79.04	88.33	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.51	14%	61%	\$279.70	2.98	2.36	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	New	0.13	3	\$0.16	0%	0%	\$88.78	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	New	0.29	3	\$0.16	0%	0%	\$88.78	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.16	0%	0%	\$88.78	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.16	0%	0%	\$88.78	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.15	3	\$0.16	0%	0%	\$88.78	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.16	0%	0%	\$88.78	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.16	0%	0%	\$88.78	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.11	10	\$0.09	0%	0%	\$154.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$7,500.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Miscellaneous	LED Signage	perBldg	New	104.49	16	\$75.53	20%	75%	\$101.04	3.23	3.70	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,928.27	25	\$4,543.80	0%	75%	\$188.64	50.24	52.95	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$88.34	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	1.09	45	\$0.84	15%	35%	\$88.34	8.59	9.58	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$88.34	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.15	20	\$0.86	15%	35%	\$758.24	3.36	3.83	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$758.24	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$758.24	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.74	20	\$0.81	45%	50%	\$9,999.00	2.74	3.13	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.72	20	\$0.81	45%	50%	\$9,999.00	-1.43	-1.60	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.45	20	\$0.81	45%	50%	\$9,999.00	-1.84	-2.07	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.40	45	\$1.70	15%	35%	\$97.56	-5.88	-6.71	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.47	45	\$1.70	15%	35%	\$97.56	11.45	12.77	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.92	45	\$1.70	15%	35%	\$97.56	14.71	16.59	Building Energy Simulation Tool

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Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.74	18	\$0.59	15%	25%	\$6.85	0.33	0.38	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	4.85	18	\$0.59	15%	25%	\$6.85	0.23	0.26	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	3.04	18	\$0.59	15%	25%	\$6.85	0.30	0.33	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.97	30	\$37.07	48%	48%	\$136.52	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	19.95	30	\$37.07	48%	48%	\$136.52	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.21	30	\$37.07	48%	48%	\$136.52	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	2,218.75	10	\$914.46	15%	75%	\$73.57	0.14	0.16	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	225.61	15	\$248.07	15%	75%	\$163.06	1.92	2.30	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	526.76	15	\$263.92	15%	75%	\$74.30	0.45	0.54	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	16.51	15	\$248.07	15%	75%	\$2,186.52	0.06	0.06	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	17,836.58	10	\$1,796.53	15%	75%	\$49.28	0.43	0.50	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	79.28	5	\$267.96	18%	75%	\$925.55	28.56	34.32	AEG-BEST
Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.30	15	\$0.05	5%	15%	\$24.92	7.24	8.77	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.59	14	\$5.25	3%	75%	\$490.18	33.91	39.67	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.58	15	\$0.26	15%	20%	\$65.13	7.01	7.90	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,901.78	15	\$189.00	13%	25%	\$14.53	8.98	10.69	VENT_PMSM-Ventilation-AEG-2016-2

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Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	685.31	15	\$1,273.23	13%	50%	\$271.68	10.18	12.10	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.37	15	\$0.03	13%	50%	\$12.05	35.76	42.53	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	15%	43%	\$982.35	2.52	3.00	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.77	15	\$0.76	5%	14%	\$54.66	9.25	10.82	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.25	15	\$0.76	5%	14%	\$54.66	30.86	36.71	HVAC_DOAS-Heating-7PLN-v5-1
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,312.13	15	\$7,501.21	15%	30%	\$336.09	10.25	12.43	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.18	15	\$7,501.21	15%	30%	\$336.09	0.00	0.00	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	2.11	2.57	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	216.85	15	\$410.87	15%	45%	\$278.97	49.93	56.72	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	116.88	15	\$698.92	15%	75%	\$880.44	52.11	57.73	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	173.59	20	\$979.24	15%	25%	\$292.60	0.54	0.68	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	272.65	20	\$979.24	15%	25%	\$292.60	11.30	12.96	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.48	5	\$0.75	30%	40%	\$117.66	10.71	12.23	STAT_WIFI-AII-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	30%	40%	\$117.66	9.13	10.19	STAT_WIFI-AII-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.48	5	\$0.75	30%	40%	\$117.66	11.73	13.23	STAT_WIFI-AII-7PLN-v2-1

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Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	275.93	10	\$8.63	25%	65%	\$5.66	2.21	2.73	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	303.19	10	\$17.56	25%	65%	(\$59.66)	1.22	1.50	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	59.91	10	\$16.82	25%	65%	(\$98.44)	0.24	0.29	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	613.56	11	\$37.97	0%	0%	\$10.83	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,122.09	15	\$15.38	16%	75%	\$2.06	5.48	6.66	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,275.63	4	\$75.87	25%	40%	(\$51.17)	3.79	4.61	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.08	2	\$5.13	15%	75%	\$30.02	2.98	3.62	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.55	20	\$258.33	1%	30%	\$2,766.01	9.49	11.53	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.67	15	\$0.36	3%	23%	\$90.39	36.00	44.98	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.94	15	\$0.60	3%	23%	\$106.53	50.40	62.97	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	540.63	15	\$56.14	1%	3%	\$18.08	1.02	1.53	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	49.76	15	\$65.99	1%	3%	\$230.94	0.04	0.06	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,449.38	11	\$26.48	15%	30%	\$1.26	11.58	18.59	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	455.61	16	\$1,864.95	5%	15%	\$723.35	7.90	12.69	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.39	9	\$0.65	15%	25%	\$57.17	10.49	13.95	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	84.89	8	\$56.85	15%	25%	\$152.06	5.58	7.42	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	106.14	7	\$3,486.31	15%	30%	\$8,127.00	10.46	13.91	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	95.96	12	\$50.74	4%	25%	\$88.20	0.87	1.05	RFG_ASH-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	22.98	4	\$24.51	4%	25%	\$350.11	0.12	0.14	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	155.81	15	\$347.21	0%	0%	\$341.75	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	117.63	2	\$10.74	4%	25%	\$77.91	0.05	0.09	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	3.86	15	\$508.61	2%	13%	\$9,999.00	3.63	4.48	RFG_HECOMP-Refrigeration-AEO15-4
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	67.67	15	\$5,552.98	2%	13%	\$9,999.00	5.31	6.56	RFG_HECOMP-Refrigeration-AEO15-4
Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	489.37	15	\$305.13	4%	25%	\$197.56	3.07	3.79	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,959.78	15	\$539.09	2%	13%	\$42.19	4.61	5.70	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,117.53	10	\$449.00	0%	0%	\$20.13	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	215.60	16	\$153.90	4%	25%	\$106.06	0.59	0.72	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	77.53	15	\$135.00	2%	13%	\$265.95	0.03	0.03	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	822.52	16	\$105.92	4%	25%	\$20.17	0.28	0.36	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	633.18	10	\$521.11	4%	25%	\$159.54	0.22	0.28	RFG_DDEF-Refrigeration-VTTRM-1
Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	377.25	8	\$18,135.52	4%	25%	\$9,999.00	0.01	0.01	RFG_ADC-Refrigeration-PGE-R6-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	834.21	12	\$605.15	4%	25%	\$123.64	3.93	4.85	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	42.83	8	\$15.90	0%	0%	\$76.73	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.41	8	\$3.87	0%	0%	\$181.18	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	15.52	5	\$49.37	0%	0%	\$889.89	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,358.83	5	\$288.64	25%	75%	\$59.59	3.91	4.71	VEND_CTRL-Miscellaneous-SCE-17R0-46
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	7,687.69	18	\$8,815.42	25%	50%	\$155.63	18.81	21.22	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	166.74	15	\$335.00	0%	0%	\$118.17	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	256.70	15	\$335.00	0%	0%	\$118.17	0.00	0.00	AEG - BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	15.75	4	\$37.32	10%	50%	\$704.72	3.87	4.06	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$5.53	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$5.53	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$5.53	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$34.46	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	16,512.58	18	\$4,231.40	0%	0%	\$34.78	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$6,173.84	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	278.44	7	\$423.28	0%	0%	(\$334.39)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	5.49	7	\$423.28	0%	0%	(\$334.39)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	5.49	7	\$423.28	0%	0%	(\$334.39)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	42,762.31	15	\$1,114.41	0%	0%	\$30.81	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	262.59	15	\$1,114.41	0%	0%	\$30.81	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	9,984.37	6	\$37.07	1%	3%	\$0.88	1.84	2.02	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.03	20	\$0.31	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.24	0%	0%	\$134.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.94	25	\$4.24	0%	0%	\$134.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.24	0%	0%	\$134.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$134.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.41	25	\$4.24	0%	0%	\$134.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.24	0%	0%	\$134.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.78	0%	3%	\$390.23	0.94	1.14	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.78	0%	3%	\$390.23	0.80	0.94	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.78	0%	3%	\$390.23	1.03	1.23	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.78	0%	3%	\$390.23	0.21	0.26	COM_SEM-Water Heating-AEG-1

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Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.24	3	\$0.78	0%	3%	\$390.23	1.39	2.02	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.78	0%	3%	\$390.23	0.31	0.41	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.78	0%	3%	\$390.23	0.23	0.26	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.78	0%	3%	\$390.23	0.19	0.20	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.98	0%	0%	\$387.64	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	Existing	0.29	3	\$0.98	0%	0%	\$387.64	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Ventilation	Commissioning	sqft	Existing	0.18	3	\$0.98	0%	0%	\$387.64	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.98	0%	0%	\$387.64	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.28	3	\$0.98	0%	0%	\$387.64	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.98	0%	0%	\$387.64	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$0.98	0%	0%	\$387.64	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.18	3	\$0.31	16%	69%	\$123.04	23.02	27.89	COM_RCX-HVAC-AEG-1
Large Retail	Heating	Retrocommissioning	sqft	Existing	0.29	3	\$0.31	16%	69%	\$123.04	19.63	22.96	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.31	16%	69%	\$123.04	25.22	29.99	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.31	16%	69%	\$123.04	1.73	2.11	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.28	3	\$0.31	16%	69%	\$123.04	28.37	41.17	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.31	16%	69%	\$123.04	6.33	8.42	COM_RCX-Lighting-AEG-1

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Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.31	16%	69%	\$123.04	9.54	10.56	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.19	10	\$0.09	0%	0%	\$95.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.20	10	\$1.12	0%	0%	\$981.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.24	0%	0%	\$1,836.50	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.10	10	\$3.24	0%	0%	\$5,822.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$6,318.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	Existing	136.36	16	\$75.53	20%	75%	\$77.42	0.30	0.35	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	16,738.10	25	\$25,316.06	0%	0%	\$176.72	0.00	0.00	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$126.22	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	0.76	45	\$0.84	15%	50%	\$126.22	2.45	2.64	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$126.22	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.19	20	\$0.86	15%	25%	\$590.40	0.51	0.55	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$590.40	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$590.40	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.81	45%	50%	\$9,999.00	0.13	0.14	Building Energy Simulation Tool

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Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.21	20	\$0.81	45%	50%	\$9,999.00	-0.10	-0.10	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.16	20	\$0.81	45%	50%	\$9,999.00	-0.15	-0.17	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$200.10	-0.12	-0.13	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.56	45	\$1.70	15%	50%	\$200.10	1.78	1.92	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.43	45	\$1.70	15%	50%	\$200.10	2.85	3.07	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	7.21	18	\$0.59	15%	25%	\$3.41	0.15	0.16	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	8.99	18	\$0.59	15%	25%	\$3.41	0.10	0.10	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.86	18	\$0.59	15%	25%	\$3.41	0.15	0.17	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.86	30	\$37.07	66%	66%	\$179.87	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	13.92	30	\$37.07	66%	66%	\$179.87	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.12	30	\$37.07	66%	66%	\$179.87	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,776.75	10	\$914.46	15%	75%	\$87.87	0.01	0.01	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	180.66	15	\$248.07	15%	75%	\$194.73	0.22	0.25	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	421.83	15	\$263.92	15%	75%	\$88.73	0.05	0.06	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	13.07	15	\$248.07	15%	75%	\$2,636.84	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	13,986.34	10	\$1,796.53	15%	75%	\$60.00	0.04	0.04	AEG-BEST

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Large Retail	Cooling	HVAC - Economizer	HP cool	New	64.88	5	\$267.96	18%	75%	\$1,112.57	1.56	1.86	AEG-BEST
Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.25	15	\$0.05	10%	15%	\$29.91	0.42	0.48	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.11	14	\$5.25	6%	75%	\$700.33	3.01	3.46	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.49	15	\$0.26	15%	20%	\$75.32	1.27	1.38	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,861.56	15	\$189.00	19%	25%	\$14.58	0.51	0.58	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	670.82	15	\$1,273.23	19%	50%	\$272.65	1.01	1.16	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.32	15	\$0.03	19%	50%	\$12.09	3.54	4.06	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	15%	43%	\$1,136.00	0.30	0.34	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.53	15	\$0.76	5%	14%	\$101.88	0.87	1.00	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.54	15	\$0.76	5%	14%	\$101.88	1.86	2.14	HVAC_DOAS-Heating-7PLN-v5-1
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,693.09	15	\$7,501.21	15%	30%	\$403.40	1.19	1.36	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.12	15	\$7,501.21	15%	30%	\$403.40	0.00	0.00	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	New	6.92	3	\$33.20	15%	45%	\$1,914.57	0.06	0.08	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	New	177.56	15	\$410.87	15%	45%	\$335.38	9.13	10.09	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	95.70	15	\$698.92	15%	75%	\$1,058.49	11.39	12.33	RTU_PREC-Cooling-XCELCO-2017-18-1

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Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	124.77	20	\$979.24	15%	25%	\$396.06	0.08	0.09	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	192.63	20	\$979.24	15%	25%	\$396.06	1.35	1.52	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.39	5	\$0.75	30%	40%	\$150.46	0.64	0.73	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.54	5	\$0.75	30%	40%	\$150.46	0.45	0.51	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.41	5	\$0.75	30%	40%	\$150.46	0.72	0.82	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	85.08	10	\$8.63	25%	65%	\$17.77	0.20	0.24	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	93.49	10	\$17.56	25%	65%	(\$187.12)	0.11	0.13	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	18.47	10	\$16.82	25%	65%	(\$308.77)	0.03	0.03	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	567.54	11	\$37.97	0%	0%	\$11.32	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,037.94	15	\$15.38	1%	75%	\$2.16	0.91	1.05	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	393.32	4	\$75.87	25%	40%	(\$160.52)	0.20	0.24	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	91.65	2	\$5.13	15%	75%	\$31.39	0.08	0.10	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	11.61	20	\$258.33	1%	30%	\$2,892.08	1.29	1.48	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.64	15	\$0.36	11%	23%	\$82.80	10.95	12.48	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.90	15	\$0.60	11%	23%	\$97.59	15.33	17.47	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	517.11	15	\$56.14	1%	3%	\$17.00	0.14	0.17	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.06	15	\$65.99	1%	3%	\$198.46	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,423.62	11	\$26.48	15%	30%	\$1.04	1.84	2.39	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	452.97	16	\$1,864.95	5%	15%	\$599.07	1.50	1.91	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.19	9	\$0.65	15%	25%	\$59.48	1.07	1.32	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	77.58	8	\$56.85	15%	25%	\$158.20	0.52	0.65	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	97.01	7	\$3,486.31	15%	30%	\$8,455.12	0.89	1.11	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	90.35	12	\$50.74	4%	25%	\$89.68	0.11	0.12	RFG_ASH-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	21.27	4	\$24.51	4%	25%	\$360.84	0.01	0.01	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	146.35	15	\$347.21	0%	0%	\$347.04	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	94.81	2	\$10.74	4%	25%	\$89.85	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	3.62	15	\$508.61	2%	13%	\$9,999.00	0.49	0.58	RFG_HECOMP-Refrigeration-AEO17-3
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	63.56	15	\$5,552.98	2%	13%	\$9,999.00	0.72	0.84	RFG_HECOMP-Refrigeration-AEO17-5

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Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	459.66	15	\$305.13	4%	25%	\$200.62	0.42	0.49	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,840.82	15	\$539.09	2%	13%	\$42.84	0.63	0.73	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	3,867.60	10	\$449.00	0%	0%	\$20.44	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	201.68	16	\$153.90	4%	25%	\$108.34	0.08	0.09	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	72.53	15	\$135.00	2%	13%	\$271.65	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	722.91	16	\$105.92	4%	25%	\$21.62	0.04	0.05	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	556.50	10	\$521.11	4%	25%	\$170.96	0.02	0.03	RFG_DDEF-Refrigeration-VTRM-1
Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	10.86	8	\$647.70	4%	25%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	783.57	12	\$5,648.09	4%	25%	\$1,171.84	0.48	0.56	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	40.20	8	\$15.90	0%	0%	\$78.11	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.14	8	\$3.87	0%	0%	\$184.45	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	14.56	5	\$49.37	0%	0%	\$906.15	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,268.69	5	\$288.64	25%	75%	\$60.79	0.24	0.29	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	6,530.63	18	\$8,815.42	25%	50%	\$179.98	3.71	4.01	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	119.84	15	\$335.00	0%	0%	\$159.46	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	182.03	15	\$335.00	0%	0%	\$159.46	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	15.36	4	\$37.32	10%	50%	\$721.17	0.20	0.22	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$5.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$5.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$5.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$23.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	14,027.32	18	\$4,231.40	0%	0%	\$40.22	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$6,045.03	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	257.55	7	\$423.28	0%	0%	(\$349.15)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	5.25	7	\$423.28	0%	0%	(\$349.15)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	5.25	7	\$423.28	0%	0%	(\$349.15)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	39,555.26	15	\$1,114.41	0%	0%	\$32.21	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	243.00	15	\$1,114.41	0%	0%	\$32.21	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,328.12	6	\$37.07	1%	3%	\$2.63	0.21	0.23	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.03	20	\$0.28	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	0.69	25	\$4.24	10%	30%	\$126.68	5.32	5.71	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	New	0.94	25	\$4.24	10%	30%	\$126.68	3.74	4.01	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.72	25	\$4.24	10%	30%	\$126.68	6.00	6.43	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$126.68	1.38	1.48	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.47	25	\$4.24	10%	30%	\$126.68	42.50	47.32	ADVNC-AII-RSRCH-1

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Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.28	25	\$4.24	10%	30%	\$126.68	6.21	6.79	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.55	0%	3%	\$311.33	0.03	0.04	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.55	0%	3%	\$311.33	0.02	0.03	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.55	0%	3%	\$311.33	0.04	0.04	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.55	0%	3%	\$311.33	0.01	0.01	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.23	3	\$0.55	0%	3%	\$311.33	0.07	0.09	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.55	0%	3%	\$311.33	0.01	0.02	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.55	0%	3%	\$311.33	0.01	0.01	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.55	0%	3%	\$311.33	0.01	0.01	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	New	0.15	3	\$0.67	16%	69%	\$302.74	4.62	5.11	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	New	0.20	3	\$0.67	16%	69%	\$302.74	3.25	3.58	COM_CX-HVAC-AEG-1
Large Retail	Ventilation	Commissioning	sqft	New	0.15	3	\$0.67	16%	69%	\$302.74	5.21	5.74	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.67	16%	69%	\$302.74	0.40	0.44	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	New	0.26	3	\$0.67	16%	69%	\$302.74	30.76	35.88	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.67	16%	69%	\$302.74	4.49	5.12	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.67	16%	69%	\$302.74	7.21	7.63	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.21	0%	0%	\$96.09	0.00	0.00	COM_RCX-HVAC-AEG-1

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Large Retail	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.21	0%	0%	\$96.09	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.21	0%	0%	\$96.09	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.21	0%	0%	\$96.09	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.26	3	\$0.21	0%	0%	\$96.09	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.21	0%	0%	\$96.09	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.21	0%	0%	\$96.09	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.18	10	\$0.09	0%	0%	\$89.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.18	10	\$1.12	0%	0%	\$1,019.98	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.05	3	\$0.24	0%	0%	\$1,907.60	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.09	10	\$3.24	0%	0%	\$6,048.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$6,562.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	New	136.36	16	\$75.53	20%	75%	\$77.42	0.04	0.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	16,553.63	25	\$25,405.66	0%	0%	\$180.39	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.15	45	\$0.84	15%	35%	\$158.94	22.16	25.56	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.43	45	\$0.84	15%	35%	\$158.94	22.75	26.19	Building Energy Simulation Tool

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Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$158.94	8.80	9.90	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.31	20	\$0.86	15%	50%	\$371.85	20.37	23.50	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$371.85	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$371.85	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.81	45%	50%	\$9,999.00	12.60	14.53	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.28	20	\$0.81	45%	50%	\$9,999.00	-3.79	-4.36	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$9,999.00	-2.59	-2.91	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.07	45	\$1.70	15%	35%	\$89.83	-3.10	-3.57	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.89	45	\$1.70	15%	35%	\$89.83	30.34	34.92	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.40	45	\$1.70	15%	35%	\$89.83	20.69	23.29	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.21	18	\$0.59	15%	50%	\$9,999.00	4.40	5.07	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.32	18	\$0.59	15%	50%	\$9,999.00	-1.99	-2.29	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.14	18	\$0.59	15%	50%	\$9,999.00	-1.36	-1.53	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.33	30	\$37.07	48%	48%	\$148.37	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	22.28	30	\$37.07	48%	48%	\$148.37	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.74	30	\$37.07	48%	48%	\$148.37	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	89.80	5	\$267.96	18%	75%	\$816.99	93.22	112.00	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.34	15	\$0.05	5%	15%	\$22.58	27.17	33.41	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.88	14	\$5.25	3%	75%	\$432.70	89.88	110.13	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.23	15	\$0.26	15%	20%	\$162.03	9.86	11.09	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	737.25	15	\$189.00	13%	25%	\$37.37	12.64	14.98	VENT_PMSM-Ventilation-AEG-2016-2
Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	265.67	15	\$1,273.23	13%	25%	\$698.55	4.56	5.40	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.15	15	\$0.03	13%	25%	\$30.97	16.01	18.97	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	1%	33%	\$2,443.76	3.99	4.73	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.91	15	\$0.76	0%	11%	\$80.07	27.59	33.80	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.50	15	\$0.76	0%	11%	\$80.07	48.86	57.90	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,697.16	15	\$7,501.21	15%	15%	\$71.39	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,047.78	15	\$7,501.21	15%	15%	\$71.39	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	6.22	7.56	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	244.94	15	\$410.87	15%	45%	\$246.98	166.21	188.80	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	132.02	15	\$698.92	15%	75%	\$779.47	173.48	192.18	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	189.67	20	\$979.24	15%	75%	\$215.78	8.35	10.54	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	411.09	20	\$979.24	15%	75%	\$215.78	87.30	100.11	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.54	5	\$0.75	30%	40%	\$127.63	40.19	46.37	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.91	5	\$0.75	30%	40%	\$127.63	24.20	27.85	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.19	5	\$0.75	30%	40%	\$127.63	16.51	18.58	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	37.26	10	\$8.63	25%	65%	\$41.95	6.56	8.09	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	40.94	10	\$17.56	25%	65%	(\$441.81)	3.60	4.44	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	8.09	10	\$16.82	25%	65%	(\$729.03)	0.70	0.85	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	613.56	11	\$37.97	0%	0%	\$10.83	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	151.43	15	\$15.38	16%	75%	\$15.28	16.23	19.74	AEG-BEST

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Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	172.24	4	\$75.87	25%	40%	(\$379.00)	11.23	13.65	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.08	2	\$5.13	15%	75%	\$30.02	8.83	10.73	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.55	20	\$258.33	1%	30%	\$2,765.79	28.12	34.18	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.44	15	\$0.36	3%	23%	\$136.95	82.97	103.67	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.62	15	\$0.60	3%	23%	\$161.40	116.16	145.13	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	160.57	15	\$56.14	1%	3%	\$60.89	2.36	3.53	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	49.76	15	\$65.99	1%	3%	\$230.94	0.13	0.19	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,936.59	11	\$26.48	15%	30%	\$1.90	26.69	42.85	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	300.70	16	\$1,864.95	5%	15%	\$1,095.99	18.22	29.25	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.39	9	\$0.65	15%	25%	\$57.17	36.63	48.73	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	84.89	8	\$56.85	15%	25%	\$152.06	19.47	25.90	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	106.14	7	\$3,486.31	15%	30%	\$8,127.00	36.52	48.58	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	8.59	12	\$50.74	4%	25%	\$982.45	0.17	0.20	RFG_ASH-Refrigeration-7PLN-v6-1

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Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	2.32	4	\$24.51	4%	25%	\$3,348.39	0.06	0.07	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	12.00	15	\$347.21	0%	0%	\$4,547.21	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	10.35	2	\$10.74	4%	25%	\$835.73	0.08	0.12	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.30	15	\$508.61	2%	13%	\$9,999.00	0.92	1.15	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.21	15	\$5,552.98	2%	13%	\$9,999.00	1.34	1.68	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	37.68	15	\$305.13	4%	25%	\$2,628.69	0.78	0.97	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	150.89	15	\$539.09	2%	13%	\$561.31	1.17	1.46	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	317.03	10	\$449.00	0%	0%	\$267.86	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	19.21	16	\$153.90	4%	25%	\$1,262.70	0.12	0.16	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	6.91	15	\$135.00	2%	13%	\$3,166.21	0.01	0.01	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	68.97	16	\$105.92	4%	25%	\$220.72	0.34	0.41	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	53.09	10	\$521.11	4%	25%	\$1,745.55	0.26	0.31	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	33.19	8	\$18,135.52	4%	25%	\$9,999.00	0.01	0.01	RFG_ADC-Refrigeration-PGE-R6-1

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Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	64.23	12	\$605.15	4%	25%	\$1,645.12	0.99	1.24	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	3.83	8	\$15.90	0%	0%	\$854.89	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.39	8	\$3.87	0%	0%	\$2,018.65	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	1.39	5	\$49.37	0%	0%	\$9,915.44	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,414.67	5	\$288.64	25%	75%	\$56.87	1.36	1.61	VEND_CTRL-Miscellaneous-SCE-17R0-47
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,080.35	18	\$8,815.42	25%	50%	\$387.17	26.47	29.79	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	182.75	15	\$335.00	0%	0%	\$88.54	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	379.11	15	\$335.00	0%	0%	\$88.54	0.00	0.00	AEG - BEST
Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	9.88	4	\$37.32	10%	50%	\$1,067.00	9.34	9.12	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.01	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$16.95	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	992.45	18	\$4,231.40	0%	0%	\$576.80	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$6,983.66	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	37.60	7	\$423.28	0%	0%	(\$2,575.12)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$2,575.12)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$2,575.12)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	5,774.01	15	\$1,114.41	0%	0%	\$229.57	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$229.57	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,105.58	6	\$37.07	1%	3%	\$7.92	4.74	5.21	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.20	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.24	0%	0%	\$168.37	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	1.02	25	\$4.24	0%	0%	\$168.37	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$168.37	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$168.37	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.93	25	\$4.24	0%	0%	\$168.37	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.24	0%	0%	\$168.37	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.54	0%	3%	\$326.97	3.53	4.34	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.54	0%	3%	\$326.97	2.13	2.61	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.54	0%	3%	\$326.97	1.45	1.72	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.54	0%	3%	\$326.97	0.63	0.77	COM_SEM-Water Heating-AEG-1
Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.16	3	\$0.54	0%	3%	\$326.97	3.21	4.66	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.54	0%	3%	\$326.97	1.08	1.44	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.54	0%	3%	\$326.97	0.09	0.07	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.54	0%	3%	\$326.97	0.46	0.45	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	Existing	0.20	3	\$0.74	0%	0%	\$362.48	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	Existing	0.34	3	\$0.74	0%	0%	\$362.48	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.74	0%	0%	\$362.48	0.00	0.00	COM_CX-HVAC-AEG-1

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Small Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.74	0%	0%	\$362.48	0.00	0.00	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.18	3	\$0.74	0%	0%	\$362.48	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.74	0%	0%	\$362.48	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.74	0%	0%	\$362.48	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.20	3	\$0.24	16%	69%	\$115.05	86.40	106.25	COM_RCX-HVAC-AEG-1
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.34	3	\$0.24	16%	69%	\$115.05	52.02	63.74	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.24	16%	69%	\$115.05	35.48	42.04	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.24	16%	69%	\$115.05	5.14	6.25	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.18	3	\$0.24	16%	69%	\$115.05	65.40	94.90	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.24	16%	69%	\$115.05	22.10	29.40	COM_RCX-Lighting-AEG-1
Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.24	16%	69%	\$115.05	3.87	2.70	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$144.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	Existing	136.36	16	\$75.53	20%	75%	\$77.42	7.01	8.18	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,144.29	25	\$3,300.91	0%	0%	\$186.66	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$349.99	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.27	45	\$0.84	15%	50%	\$349.99	6.25	6.75	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$349.99	0.35	0.38	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.40	20	\$0.86	15%	50%	\$211.13	6.41	6.93	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.10	20	\$0.86	15%	50%	\$211.13	0.60	0.65	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.03	20	\$0.86	15%	50%	\$211.13	0.54	0.58	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.81	45%	50%	\$9,999.00	0.81	0.87	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.81	45%	50%	\$9,999.00	-0.24	-0.26	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.22	-0.24	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$591.11	-0.03	-0.04	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.26	45	\$1.70	15%	50%	\$591.11	1.77	1.91	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.07	45	\$1.70	15%	50%	\$591.11	1.59	1.72	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	3.28	18	\$0.59	15%	50%	\$4.24	0.82	0.89	Building Energy Simulation Tool

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Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	11.86	18	\$0.59	15%	50%	\$4.24	1.06	1.15	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.46	18	\$0.59	15%	50%	\$4.24	0.95	1.03	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.63	30	\$37.07	66%	66%	\$212.91	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	14.13	30	\$37.07	66%	66%	\$212.91	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.38	30	\$37.07	66%	66%	\$212.91	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	New	64.69	5	\$267.96	18%	75%	\$1,116.48	4.48	5.34	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.25	15	\$0.05	10%	15%	\$29.78	1.44	1.66	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.19	14	\$5.25	6%	75%	\$659.28	7.70	8.87	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	15	\$0.26	15%	20%	\$184.16	1.81	1.97	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	685.16	15	\$189.00	19%	25%	\$39.63	0.73	0.83	VENT_PMSM-Ventilation-AEG-2016-2

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Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	246.90	15	\$1,273.23	19%	25%	\$740.82	0.26	0.30	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.13	15	\$0.03	19%	25%	\$32.85	0.92	1.05	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	1%	33%	\$2,777.62	0.48	0.55	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.57	15	\$0.76	0%	11%	\$138.99	2.51	2.88	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.22	15	\$0.76	0%	11%	\$138.99	3.00	3.43	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,706.90	15	\$7,501.21	3%	15%	\$104.95	3.15	3.63	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,637.72	15	\$7,501.21	3%	15%	\$104.95	3.18	3.65	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	New	6.09	3	\$33.20	0%	45%	\$2,176.32	0.24	0.29	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	New	176.44	15	\$410.87	3%	45%	\$337.51	37.05	40.98	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	95.10	15	\$698.92	3%	75%	\$1,065.21	39.81	43.08	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	134.37	20	\$979.24	8%	75%	\$309.42	1.32	1.49	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	271.91	20	\$979.24	8%	75%	\$309.42	10.84	12.26	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.39	5	\$0.75	1%	40%	\$178.06	8.64	9.86	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.57	5	\$0.75	1%	40%	\$178.06	4.50	5.13	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.17	5	\$0.75	1%	40%	\$178.06	4.04	4.58	STAT_WIFI-AII-7PLN-v2-1

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Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	34.46	10	\$8.63	3%	65%	\$43.86	0.94	1.11	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	37.87	10	\$17.56	3%	65%	(\$461.94)	0.51	0.61	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	7.48	10	\$16.82	3%	65%	(\$762.25)	0.12	0.14	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	567.54	11	\$37.97	7%	0%	\$11.32	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	140.07	15	\$15.38	1%	75%	\$15.98	2.68	3.10	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	159.32	4	\$75.87	25%	40%	(\$396.27)	0.59	0.71	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	91.65	2	\$5.13	15%	75%	\$31.39	0.25	0.30	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	11.61	20	\$258.33	1%	30%	\$2,891.86	3.81	4.39	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.42	15	\$0.36	11%	23%	\$125.46	25.24	28.76	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.59	15	\$0.60	11%	23%	\$147.86	35.34	40.27	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	153.58	15	\$56.14	1%	3%	\$57.23	0.31	0.40	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.06	15	\$65.99	1%	3%	\$198.46	0.02	0.02	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,919.59	11	\$26.48	15%	30%	\$1.58	4.23	5.50	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	298.96	16	\$1,864.95	5%	15%	\$907.68	3.47	4.41	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.19	9	\$0.65	15%	25%	\$59.48	3.75	4.63	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	77.58	8	\$56.85	15%	25%	\$158.20	1.83	2.27	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	97.01	7	\$3,486.31	15%	30%	\$8,455.12	3.12	3.89	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	8.13	12	\$50.74	4%	25%	\$996.07	0.02	0.02	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	2.14	4	\$24.51	4%	25%	\$3,467.62	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.30	15	\$347.21	0%	0%	\$4,666.71	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	7.82	2	\$10.74	4%	25%	\$1,039.29	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.28	15	\$508.61	2%	13%	\$9,999.00	0.12	0.14	RFG_HECOMP-Refrigeration-AEO17-3
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.91	15	\$5,552.98	2%	13%	\$9,999.00	0.17	0.21	RFG_HECOMP-Refrigeration-AEO17-5
Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	35.51	15	\$305.13	4%	25%	\$2,697.77	0.10	0.12	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	142.19	15	\$539.09	2%	13%	\$576.06	0.15	0.18	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	298.75	10	\$449.00	0%	0%	\$274.90	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	17.92	16	\$153.90	4%	25%	\$1,314.13	0.02	0.02	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	6.44	15	\$135.00	2%	13%	\$3,295.18	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	62.28	16	\$105.92	4%	25%	\$233.74	0.05	0.06	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	47.94	10	\$521.11	4%	25%	\$1,848.59	0.03	0.03	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	0.90	8	\$647.70	4%	25%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	60.53	12	\$5,648.09	4%	25%	\$9,999.00	0.11	0.14	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	3.62	8	\$15.90	0%	0%	\$867.60	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.37	8	\$3.87	0%	0%	\$2,048.65	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1.31	5	\$49.37	0%	0%	\$9,999.00	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,337.56	5	\$288.64	25%	75%	\$57.66	0.07	0.08	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,671.01	18	\$8,815.42	25%	50%	\$440.06	5.29	5.72	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	129.47	15	\$335.00	0%	0%	\$125.87	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	252.95	15	\$335.00	0%	0%	\$125.87	0.00	0.00	AEG - BEST

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Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	9.57	4	\$37.32	10%	50%	\$1,121.81	0.46	0.47	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$9.62	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	860.57	18	\$4,231.40	0%	0%	\$655.60	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$6,807.08	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	34.78	7	\$423.28	0%	0%	(\$2,692.50)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$2,692.50)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$2,692.50)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	5,340.97	15	\$1,114.41	0%	0%	\$240.03	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$240.03	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,105.58	6	\$37.07	1%	3%	\$7.92	0.54	0.59	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.18	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	0.69	25	\$4.24	10%	25%	\$158.67	13.77	14.77	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	New	1.01	25	\$4.24	10%	25%	\$158.67	7.17	7.68	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$158.67	6.43	6.88	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$158.67	3.06	3.29	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	0.97	25	\$4.24	10%	25%	\$158.67	73.47	81.80	ADVNC-AII-RSRCH-1
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.28	25	\$4.24	10%	25%	\$158.67	16.25	17.78	ADVNC-AII-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.33	0%	3%	\$242.91	0.11	0.14	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	New	0.16	3	\$0.33	0%	3%	\$242.91	0.06	0.07	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.33	0%	3%	\$242.91	0.05	0.06	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.33	0%	3%	\$242.91	0.03	0.03	COM_SEM-Water Heating-AEG-1

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Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.15	3	\$0.33	0%	3%	\$242.91	0.15	0.20	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.33	0%	3%	\$242.91	0.05	0.06	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.33	0%	3%	\$242.91	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.33	0%	3%	\$242.91	0.02	0.02	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	New	0.15	3	\$0.43	16%	69%	\$263.42	15.95	17.62	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	New	0.22	3	\$0.43	16%	69%	\$263.42	8.30	9.16	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	New	0.06	3	\$0.43	16%	69%	\$263.42	7.44	8.20	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.43	16%	69%	\$263.42	1.18	1.31	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	New	0.17	3	\$0.43	16%	69%	\$263.42	70.89	82.70	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.43	16%	69%	\$263.42	15.68	17.89	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.43	16%	69%	\$263.42	0.56	0.48	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.14	0%	0%	\$83.61	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Heating	Retrocommissioning	sqft	New	0.22	3	\$0.14	0%	0%	\$83.61	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.14	0%	0%	\$83.61	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.14	0%	0%	\$83.61	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.17	3	\$0.14	0%	0%	\$83.61	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.14	0%	0%	\$83.61	0.00	0.00	COM_RCX-Lighting-AEG-1

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Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.14	0%	0%	\$83.61	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$136.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	New	136.36	16	\$75.53	20%	75%	\$77.42	0.84	0.96	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,132.01	25	\$3,308.24	0%	0%	\$188.64	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$291.40	0.80	0.92	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.31	45	\$0.84	15%	35%	\$291.40	4.38	4.93	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$291.40	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	35%	\$5,872.56	0.19	0.22	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$5,872.56	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$5,872.56	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.14	20	\$0.81	45%	50%	\$9,999.00	1.37	1.57	Building Energy Simulation Tool

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Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.19	20	\$0.81	45%	50%	\$9,999.00	-0.65	-0.73	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.09	20	\$0.81	45%	50%	\$9,999.00	-0.99	-1.11	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.24	45	\$1.70	15%	35%	\$328.83	-5.69	-6.52	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.57	45	\$1.70	15%	35%	\$328.83	4.78	5.38	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.26	45	\$1.70	15%	35%	\$328.83	7.24	8.11	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.99	18	\$0.59	15%	50%	\$9,999.00	-0.77	-0.89	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.18	18	\$0.59	15%	50%	\$9,999.00	-0.86	-0.97	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.86	18	\$0.59	15%	50%	\$9,999.00	-1.31	-1.47	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.94	30	\$37.07	48%	48%	\$294.91	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.10	30	\$37.07	48%	48%	\$294.91	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.43	30	\$37.07	48%	48%	\$294.91	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	69.37	5	\$267.96	18%	75%	\$1,057.60	29.70	35.67	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.38	15	\$0.05	5%	15%	\$19.98	7.92	9.64	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.45	14	\$5.25	3%	75%	\$1,746.34	17.30	20.51	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.37	15	\$0.26	15%	20%	\$101.04	4.21	4.72	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	280.00	15	\$189.00	13%	25%	\$97.82	5.40	6.36	VENT_PMSM-Ventilation-AEG-2016-2
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	100.90	15	\$1,273.23	13%	50%	\$1,828.78	6.12	7.20	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.24	15	\$0.13	13%	50%	\$81.08	21.51	25.32	FAN_VSD-Ventilation-MIDATL-v3.0-13
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	10%	44%	\$1,523.86	1.82	2.14	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.67	15	\$0.76	3%	15%	\$75.38	5.66	6.71	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.80	15	\$0.76	3%	15%	\$75.38	22.25	26.20	HVAC_DOAS-Heating-7PLN-v5-1
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,145.02	15	\$7,501.21	15%	15%	\$84.77	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,856.46	15	\$7,501.21	15%	15%	\$84.77	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.82	2.57	3.12	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	Existing	189.22	15	\$410.87	15%	45%	\$319.71	52.95	60.14	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	101.99	15	\$698.92	15%	75%	\$1,009.03	55.27	61.21	RTU_PREC-Cooling-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	151.50	20	\$685.47	15%	75%	\$280.09	2.85	3.60	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	177.19	20	\$685.47	15%	75%	\$280.09	2.56	2.94	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.60	5	\$0.75	30%	40%	\$130.25	11.72	13.42	STAT_WIFI-All-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.67	5	\$0.75	30%	40%	\$130.25	4.66	5.24	STAT_WIFI-All-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.31	5	\$0.75	30%	40%	\$130.25	7.06	7.91	STAT_WIFI-All-7PLN-v2-1
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	113.22	10	\$8.63	25%	65%	\$13.79	13.55	16.69	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	124.40	10	\$17.56	25%	65%	(\$145.19)	7.45	9.17	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	24.58	10	\$16.82	25%	65%	(\$239.58)	1.45	1.76	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	614.01	11	\$37.97	0%	0%	\$10.80	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	460.40	15	\$15.38	16%	75%	\$5.02	33.57	40.75	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	523.40	4	\$75.87	25%	40%	(\$124.55)	23.21	28.17	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.15	2	\$5.13	15%	75%	\$29.96	18.25	22.15	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.56	20	\$258.33	1%	30%	\$2,760.87	58.09	70.52	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.65	15	\$0.36	3%	23%	\$90.52	33.80	41.68	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.91	15	\$0.60	3%	23%	\$106.68	47.32	58.35	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	107.38	15	\$56.14	1%	3%	\$90.66	1.16	1.71	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	50.58	15	\$65.99	1%	3%	\$226.26	0.04	0.06	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,773.71	11	\$26.48	15%	30%	\$2.00	6.77	10.78	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	284.02	16	\$1,864.95	5%	15%	\$1,153.09	4.62	7.36	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.59	9	\$0.65	15%	25%	\$82.46	24.81	32.31	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	90.82	8	\$56.85	15%	25%	\$136.56	13.19	17.17	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	113.57	7	\$3,486.31	15%	30%	\$7,298.19	24.73	32.21	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	100.55	12	\$50.74	11%	75%	\$83.91	4.12	4.89	RFG_ASH-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	82.92	4	\$24.51	5%	35%	\$139.47	4.79	9.02	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	115.82	15	\$347.21	0%	0%	\$526.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	133.97	2	\$10.74	11%	75%	\$67.48	40.18	78.94	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	2.87	15	\$508.61	6%	38%	\$9,999.00	111.40	157.12	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	50.30	15	\$5,552.98	6%	38%	\$9,999.00	162.94	229.81	RFG_HECOMP-Refrigeration-AEO15-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	363.77	15	\$305.13	11%	75%	\$304.21	94.27	132.96	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,456.81	15	\$539.09	6%	38%	\$64.96	141.57	199.67	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	3,060.78	10	\$449.00	0%	0%	\$31.00	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	265.75	16	\$153.90	11%	75%	\$115.17	11.89	20.47	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	95.57	15	\$135.00	6%	38%	\$288.78	0.53	0.92	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,275.07	16	\$105.92	11%	75%	\$9.74	86.86	163.60	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,751.37	10	\$521.11	11%	75%	\$77.00	66.87	125.94	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	429.66	8	\$18,135.52	5%	35%	\$9,999.00	2.15	4.22	RFG_ADC-Refrigeration-PGE-R6-1
Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	620.11	12	\$605.15	5%	35%	\$190.38	56.24	79.33	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	44.87	8	\$15.90	0%	0%	\$73.01	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.62	8	\$3.87	0%	0%	\$172.41	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	16.26	5	\$49.37	0%	0%	\$846.85	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,342.17	5	\$288.64	25%	75%	\$60.33	61.79	74.50	VEND_CTRL-Miscellaneous-SCE-17R0-44
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,911.53	18	\$8,815.42	25%	50%	\$241.43	11.31	12.68	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	204.69	15	\$335.00	0%	0%	\$128.74	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	191.64	15	\$335.00	0%	0%	\$128.74	0.00	0.00	AEG - BEST
Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	23.48	4	\$37.32	10%	50%	\$436.18	6.21	5.84	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.01	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$5.39	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$5.39	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$5.39	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$8.60	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	580.23	18	\$4,231.40	0%	0%	\$980.94	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.03	10	\$1.71	0%	0%	\$9,466.35	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	114.24	7	\$423.28	0%	0%	(\$846.27)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$846.27)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$846.27)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	17,545.75	15	\$1,114.41	0%	0%	\$75.44	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$75.44	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,513.43	6	\$37.07	1%	3%	\$5.79	4.70	5.16	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.08	20	\$0.81	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	0.78	25	\$4.24	0%	0%	\$85.57	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.12	25	\$4.24	0%	0%	\$85.57	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.49	25	\$4.24	0%	0%	\$85.57	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	1.95	25	\$4.24	0%	0%	\$85.57	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.72	25	\$4.24	0%	0%	\$85.57	0.00	0.00	ADVNC-AII-RSRCH-1

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Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.67	25	\$4.24	0%	0%	\$85.57	0.00	0.00	ADVNC-All-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.16	3	\$2.65	0%	0%	\$731.89	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$2.65	0%	0%	\$731.89	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.08	3	\$2.65	0%	0%	\$731.89	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.32	3	\$2.65	0%	0%	\$731.89	0.00	0.00	COM_SEM-Water Heating-AEG-1
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.29	3	\$2.65	0%	0%	\$731.89	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$2.65	0%	0%	\$731.89	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.38	3	\$2.65	0%	0%	\$731.89	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$2.65	0%	0%	\$731.89	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	Existing	0.23	3	\$1.42	0%	0%	\$299.55	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	Existing	0.25	3	\$1.42	0%	0%	\$299.55	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	Existing	0.12	3	\$1.42	0%	0%	\$299.55	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Water Heating	Commissioning	sqft	Existing	0.15	3	\$1.42	0%	0%	\$299.55	0.00	0.00	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.33	3	\$1.42	0%	0%	\$299.55	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.13	3	\$1.42	0%	0%	\$299.55	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.87	3	\$1.42	0%	0%	\$299.55	0.00	0.00	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.23	3	\$0.45	24%	79%	\$95.08	26.15	31.82	COM_RCX-HVAC-AEG-1

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Restaurant	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.45	24%	79%	\$95.08	10.39	12.32	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.12	3	\$0.45	24%	79%	\$95.08	15.74	18.53	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.15	3	\$0.45	24%	79%	\$95.08	11.02	13.38	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.33	3	\$0.45	24%	79%	\$95.08	33.51	47.58	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.45	24%	79%	\$95.08	15.53	20.23	COM_RCX-Lighting-AEG-1
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.87	3	\$0.45	24%	79%	\$95.08	101.22	128.08	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.23	10	\$0.09	0%	0%	\$79.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	2.67	10	\$1.12	0%	0%	\$82.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.69	3	\$0.24	0%	0%	\$155.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	1.30	10	\$3.24	0%	0%	\$491.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.26	10	\$0.70	0%	0%	\$533.72	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	Existing	194.86	16	\$75.53	20%	75%	\$54.18	7.26	8.47	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,973.11	25	\$4,586.38	0%	0%	\$187.72	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$849.43	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.11	45	\$0.84	15%	50%	\$849.43	0.66	0.71	Building Energy Simulation Tool

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Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$849.43	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.11	20	\$0.86	15%	50%	\$1,010.20	0.46	0.50	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$1,010.20	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$1,010.20	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.02	20	\$0.81	45%	50%	\$9,999.00	0.05	0.06	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$9,999.00	-0.03	-0.04	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.05	-0.05	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$3,229.12	-0.13	-0.14	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$1.70	15%	50%	\$3,229.12	0.18	0.19	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$1.70	15%	50%	\$3,229.12	0.25	0.27	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.16	18	\$0.59	15%	35%	\$9,999.00	0.01	0.01	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-3.46	18	\$0.59	15%	35%	\$9,999.00	-0.06	-0.07	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.51	18	\$0.59	15%	35%	\$9,999.00	-0.09	-0.10	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.84	30	\$37.07	66%	66%	\$324.01	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	8.78	30	\$37.07	66%	66%	\$324.01	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.21	30	\$37.07	66%	66%	\$324.01	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	49.37	5	\$267.96	18%	75%	\$1,462.78	1.41	1.68	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.27	15	\$0.05	10%	15%	\$26.95	0.41	0.47	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.44	14	\$5.25	6%	75%	\$1,783.00	2.17	2.49	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.34	15	\$0.26	15%	20%	\$110.04	0.81	0.87	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	278.18	15	\$189.00	19%	25%	\$97.61	0.32	0.37	VENT_PMSM-Ventilation-AEG-2016-2
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	100.24	15	\$1,273.23	19%	50%	\$1,824.85	0.64	0.73	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.22	15	\$0.12	19%	50%	\$80.91	2.25	2.58	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	44%	\$1,659.59	0.23	0.26	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.64	15	\$0.76	3%	15%	\$108.62	0.75	0.86	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.37	15	\$0.76	3%	15%	\$108.62	1.42	1.63	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,989.35	15	\$7,501.21	3%	15%	\$93.70	0.89	1.03	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,542.17	15	\$7,501.21	3%	15%	\$93.70	0.90	1.03	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	New	6.02	3	\$33.20	0%	45%	\$2,203.06	0.10	0.12	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	New	134.67	15	\$410.87	3%	45%	\$442.20	11.66	12.90	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	72.59	15	\$698.92	3%	75%	\$1,395.61	12.53	13.56	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	108.89	20	\$685.47	8%	75%	\$306.67	0.46	0.52	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	178.05	20	\$685.47	8%	75%	\$306.67	0.48	0.55	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.44	5	\$0.75	1%	40%	\$148.40	2.45	2.79	STAT_WIFI-All-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.64	5	\$0.75	1%	40%	\$148.40	1.27	1.44	STAT_WIFI-All-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.28	5	\$0.75	1%	40%	\$148.40	1.79	2.04	STAT_WIFI-All-7PLN-v2-1
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	109.25	10	\$8.63	3%	65%	\$13.66	2.05	2.40	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	120.04	10	\$17.56	3%	65%	(\$143.91)	1.13	1.32	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	23.72	10	\$16.82	3%	65%	(\$237.46)	0.25	0.30	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	7%	0%	\$10.71	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	444.26	15	\$15.38	1%	75%	\$4.97	5.88	6.74	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	505.05	4	\$75.87	25%	40%	(\$123.45)	1.29	1.53	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.54	0.65	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.12	20	\$258.33	1%	30%	\$2,736.40	8.35	9.55	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.60	15	\$0.36	11%	23%	\$88.69	9.45	10.79	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.85	15	\$0.60	11%	23%	\$104.53	13.23	15.11	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	99.76	15	\$56.14	1%	3%	\$90.95	0.14	0.18	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	50.82	15	\$65.99	1%	3%	\$209.88	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,750.58	11	\$26.48	15%	30%	\$1.67	1.06	1.37	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	281.66	16	\$1,864.95	5%	15%	\$963.32	0.87	1.10	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.48	9	\$0.65	15%	25%	\$83.93	2.59	3.15	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	84.07	8	\$56.85	15%	25%	\$138.99	1.26	1.55	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	105.12	7	\$3,486.31	15%	30%	\$7,428.52	2.16	2.65	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	95.25	12	\$50.74	11%	75%	\$85.06	0.47	0.54	RFG_ASH-Refrigeration-7PLN-v6-1

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Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	66.58	4	\$24.51	5%	35%	\$162.22	0.25	0.42	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	100.24	15	\$347.21	0%	0%	\$569.90	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	105.92	2	\$10.74	11%	75%	\$80.50	1.13	2.00	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	2.48	15	\$508.61	6%	38%	\$9,999.00	14.88	18.07	RFG_HECOMP-Refrigeration-AEO17-3
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	43.54	15	\$5,552.98	6%	38%	\$9,999.00	21.77	26.44	RFG_HECOMP-Refrigeration-AEO17-5
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	314.84	15	\$305.13	11%	75%	\$329.45	12.60	15.29	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,260.85	15	\$539.09	6%	38%	\$70.35	18.92	22.97	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	2,649.06	10	\$449.00	0%	0%	\$33.57	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	214.96	16	\$153.90	11%	75%	\$133.99	1.60	2.15	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	77.30	15	\$135.00	6%	38%	\$335.99	0.07	0.09	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,816.65	16	\$105.92	11%	75%	\$11.44	12.14	16.99	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,398.47	10	\$521.11	11%	75%	\$90.46	7.27	10.79	RFG_DDEF-Refrigeration-VTTRM-1

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Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	12.13	8	\$647.70	5%	35%	\$9,999.00	0.20	0.31	RFG_ASH-Refrigeration-NMTRM-2016-1
Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	536.70	12	\$5,648.09	5%	35%	\$1,924.38	6.73	8.29	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	42.38	8	\$15.90	0%	0%	\$74.09	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.37	8	\$3.87	0%	0%	\$174.95	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	15.35	5	\$49.37	0%	0%	\$859.48	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,253.13	5	\$288.64	25%	75%	\$61.54	3.93	4.65	VEND_CTRL-Miscellaneous-SCE-17R0-41
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,470.89	18	\$8,815.42	25%	50%	\$262.93	2.35	2.54	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	147.12	15	\$335.00	0%	0%	\$145.55	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	183.60	15	\$335.00	0%	0%	\$145.55	0.00	0.00	AEG - BEST
Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	22.65	4	\$37.32	10%	50%	\$464.46	0.30	0.30	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$4.92	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$4.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$4.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	528.17	18	\$4,231.40	0%	0%	\$1,068.31	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.03	10	\$1.58	0%	0%	\$8,666.78	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	110.24	7	\$423.28	0%	0%	(\$838.77)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$838.77)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$838.77)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	16,930.71	15	\$1,114.41	0%	0%	\$74.77	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$74.77	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,513.43	6	\$37.07	1%	3%	\$5.79	0.53	0.58	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.08	20	\$0.73	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	0.76	25	\$4.24	10%	25%	\$81.12	3.90	4.18	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.13	25	\$4.24	10%	25%	\$81.12	2.02	2.16	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.49	25	\$4.24	10%	25%	\$81.12	2.86	3.06	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	2.00	25	\$4.24	10%	25%	\$81.12	6.71	7.18	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	1.72	25	\$4.24	10%	25%	\$81.12	33.44	37.13	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.69	25	\$4.24	10%	25%	\$81.12	11.23	12.25	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.12	3	\$2.17	0%	0%	\$638.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	New	0.17	3	\$2.17	0%	0%	\$638.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$2.17	0%	0%	\$638.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.31	3	\$2.17	0%	0%	\$638.00	0.00	0.00	COM_SEM-Water Heating-AEG-1
Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.27	3	\$2.17	0%	0%	\$638.00	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$2.17	0%	0%	\$638.00	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.32	3	\$2.17	0%	0%	\$638.00	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$2.17	0%	0%	\$638.00	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	New	0.16	3	\$1.13	24%	79%	\$259.17	4.69	5.18	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	New	0.24	3	\$1.13	24%	79%	\$259.17	2.43	2.68	COM_CX-HVAC-AEG-1

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Restaurant	Ventilation	Commissioning	sqft	New	0.11	3	\$1.13	24%	79%	\$259.17	3.44	3.79	COM_CX-HVAC-AEG-1
Restaurant	Water Heating	Commissioning	sqft	New	0.14	3	\$1.13	24%	79%	\$259.17	2.69	2.96	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	New	0.31	3	\$1.13	24%	79%	\$259.17	33.48	39.05	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.12	3	\$1.13	24%	79%	\$259.17	11.25	12.74	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	New	0.75	3	\$1.13	24%	79%	\$259.17	75.78	81.45	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	New	0.16	3	\$0.36	0%	0%	\$82.26	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	New	0.24	3	\$0.36	0%	0%	\$82.26	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.11	3	\$0.36	0%	0%	\$82.26	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.14	3	\$0.36	0%	0%	\$82.26	0.00	0.00	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.31	3	\$0.36	0%	0%	\$82.26	0.00	0.00	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.36	0%	0%	\$82.26	0.00	0.00	COM_RCX-Lighting-AEG-1
Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.75	3	\$0.36	0%	0%	\$82.26	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.22	10	\$0.09	0%	0%	\$79.39	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	2.30	10	\$1.12	0%	0%	\$91.70	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.60	3	\$0.24	0%	0%	\$171.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	1.12	10	\$3.24	0%	0%	\$543.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.22	10	\$0.70	0%	0%	\$590.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	New	194.86	16	\$75.53	20%	75%	\$54.18	0.87	0.99	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,957.41	25	\$4,594.24	0%	0%	\$189.47	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.32	45	\$0.84	15%	35%	\$303.73	13.28	15.19	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$303.73	0.00	0.01	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$303.73	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.43	20	\$0.81	45%	50%	\$1,974.90	4.43	5.06	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.27	20	\$0.81	45%	50%	\$1,974.90	-0.51	-0.58	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.81	45%	50%	\$1,974.90	-1.36	-1.53	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.77	45	\$1.70	15%	35%	\$186.68	17.70	20.25	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.21	45	\$1.70	15%	35%	\$186.68	0.93	1.05	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.08	45	\$1.70	15%	35%	\$186.68	2.45	2.75	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	1.69	18	\$0.59	15%	25%	\$41.77	0.11	0.13	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.18	18	\$0.59	15%	25%	\$41.77	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.07	18	\$0.59	15%	25%	\$41.77	0.01	0.01	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.87	30	\$37.07	48%	48%	\$381.74	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	7.42	30	\$37.07	48%	48%	\$381.74	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.70	30	\$37.07	48%	48%	\$381.74	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,834.25	10	\$914.46	15%	75%	\$41.56	0.10	0.11	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	363.41	15	\$248.07	15%	75%	\$98.81	1.27	1.49	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	910.31	15	\$263.92	15%	75%	\$41.97	0.32	0.37	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	28.54	15	\$248.07	15%	75%	\$1,248.88	0.04	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	30,834.59	10	\$1,796.53	15%	75%	\$28.15	0.30	0.35	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	Existing	135.04	5	\$267.96	18%	75%	\$543.20	37.71	45.31	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.43	15	\$0.05	5%	15%	\$17.42	9.64	11.69	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.39	14	\$5.25	3%	75%	\$235.65	12.30	14.72	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.41	15	\$0.26	15%	20%	\$91.73	5.20	5.82	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	518.92	15	\$189.00	13%	25%	\$52.75	6.73	7.91	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	186.99	15	\$1,273.23	13%	50%	\$986.10	7.62	8.96	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.26	15	\$0.08	13%	50%	\$43.72	26.78	31.49	FAN_VSD-Ventilation-MIDATL-v3.0-13
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	1%	34%	\$1,383.55	2.18	2.57	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.85	15	\$0.76	0%	11%	\$63.99	3.88	4.64	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.88	15	\$0.76	0%	11%	\$63.99	26.70	31.40	HVAC_DOAS-Heating-7PLN-v5-1
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,740.88	15	\$7,501.21	15%	15%	\$68.82	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	11,344.39	15	\$7,501.21	15%	15%	\$68.82	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	1.66	2.01	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	Existing	368.80	15	\$410.87	15%	45%	\$164.03	65.94	74.93	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	198.78	15	\$698.92	15%	75%	\$517.69	68.55	75.96	RTU_PREC-Cooling-XCELCO-2017-18-1
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	295.23	20	\$1,175.09	15%	25%	\$202.87	0.49	0.61	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	476.64	20	\$1,175.09	15%	25%	\$202.87	0.51	0.59	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.69	5	\$0.75	30%	40%	\$109.40	14.12	16.15	STAT_WIFI-AII-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.85	5	\$0.75	30%	40%	\$109.40	3.28	3.72	STAT_WIFI-AII-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.34	5	\$0.75	30%	40%	\$109.40	8.70	9.75	STAT_WIFI-AII-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	117.57	10	\$8.63	25%	65%	\$14.15	4.28	5.65	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	129.18	10	\$17.56	25%	65%	(\$149.00)	2.35	3.11	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	25.53	10	\$16.82	25%	65%	(\$245.86)	0.46	0.59	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	593.40	11	\$37.97	0%	0%	\$11.91	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	477.97	15	\$15.38	16%	75%	\$5.15	10.57	13.67	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	543.52	4	\$75.87	25%	40%	(\$127.82)	7.31	9.45	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	95.82	2	\$5.13	15%	75%	\$33.03	5.75	7.43	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.14	20	\$258.33	1%	30%	\$3,043.64	18.30	23.66	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.94	15	\$0.36	3%	23%	\$65.57	50.75	64.28	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.31	15	\$0.60	3%	23%	\$77.27	71.05	89.99	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	415.22	15	\$56.14	1%	3%	\$23.44	1.37	2.07	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	49.30	15	\$65.99	1%	3%	\$232.05	0.05	0.07	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	7,445.07	11	\$26.48	15%	30%	\$0.75	20.50	32.73	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	762.36	16	\$1,864.95	5%	15%	\$429.46	13.99	22.34	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.16	9	\$0.65	15%	25%	\$116.76	24.21	31.93	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	88.66	8	\$56.85	15%	25%	\$143.95	12.87	16.97	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	110.86	7	\$3,486.31	15%	30%	\$7,693.37	24.13	31.83	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	285.85	12	\$50.74	33%	75%	\$29.61	94.38	113.27	RFG_ASH-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	18.41	4	\$3.68	27%	35%	\$70.02	2.28	2.96	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	683.91	15	\$347.21	23%	75%	\$77.96	969.64	1,199.20	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	131.67	2	\$10.74	33%	75%	\$68.88	6.25	12.02	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	16.92	15	\$508.61	16%	38%	\$7,002.74	278.31	344.20	RFG_HECOMP-Refrigeration-AEO15-4
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	297.03	15	\$5,552.98	16%	38%	\$4,731.69	407.06	503.44	RFG_HECOMP-Refrigeration-AEO15-4
Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	716.02	15	\$305.13	33%	75%	\$135.20	235.50	291.25	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,290.35	15	\$539.09	16%	38%	\$64.16	353.67	437.40	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	2,711.05	10	\$449.00	15%	30%	\$30.62	524.52	648.69	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	274.28	16	\$153.90	33%	75%	\$84.16	63.24	78.70	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	98.63	15	\$135.00	16%	38%	\$211.04	2.84	3.54	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	241.63	16	\$105.92	33%	75%	\$77.88	21.18	31.55	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	186.01	10	\$521.11	33%	75%	\$615.92	16.30	24.28	RFG_DDEF-Refrigeration-VTTRM-1
Grocery	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	1,266.86	8	\$54,406.57	27%	35%	\$9,999.00	0.14	0.28	RFG_ADC-Refrigeration-PGE-R6-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	549.26	12	\$605.15	27%	35%	\$188.03	60.22	74.47	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	57.42	8	\$15.90	20%	75%	\$57.24	131.02	157.58	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	13.15	8	\$3.87	20%	75%	\$60.82	11.25	13.53	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	46.23	5	\$49.37	20%	75%	\$298.74	4.94	5.95	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	963.79	5	\$288.64	25%	75%	\$84.02	11.86	14.31	VEND_CTRL-Miscellaneous-SCE-17R0-32
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,405.94	18	\$8,815.42	25%	50%	\$219.20	13.96	15.63	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	231.11	15	\$335.00	0%	0%	\$94.62	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	301.80	15	\$335.00	0%	0%	\$94.62	0.00	0.00	AEG - BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.28	4	\$37.32	10%	50%	\$883.88	3.29	3.35	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$7.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$7.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$7.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$34.14	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,322.31	18	\$4,231.40	0%	0%	\$244.92	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$1.00	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	118.64	7	\$423.28	0%	0%	(\$868.46)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$868.46)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$868.46)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	18,220.13	15	\$1,114.41	0%	0%	\$77.42	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$77.42	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,621.10	6	\$37.07	1%	3%	\$5.40	1.54	1.70	ESTAR_WC-Miscellaneous-7PLN-v6-1
Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.03	20	\$0.30	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.01	25	\$4.24	0%	0%	\$94.32	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	1.32	25	\$4.24	0%	0%	\$94.32	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.88	25	\$4.24	0%	0%	\$94.32	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.56	25	\$4.24	0%	0%	\$94.32	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.79	25	\$4.24	0%	0%	\$94.32	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.60	25	\$4.24	0%	0%	\$94.32	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.19	3	\$4.66	4%	27%	\$948.43	9.60	11.65	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.23	3	\$4.66	4%	27%	\$948.43	2.23	2.67	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$4.66	4%	27%	\$948.43	5.92	6.96	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$4.66	4%	27%	\$948.43	3.14	4.06	COM_SEM-Water Heating-AEG-1

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Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.31	3	\$4.66	4%	27%	\$948.43	14.26	20.89	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.10	3	\$4.66	4%	27%	\$948.43	5.49	7.24	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	1.03	3	\$4.66	4%	27%	\$948.43	65.93	76.26	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$4.66	4%	27%	\$948.43	1.24	1.26	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	Existing	0.26	3	\$1.48	0%	0%	\$170.51	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	Existing	0.32	3	\$1.48	0%	0%	\$170.51	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Ventilation	Commissioning	sqft	Existing	0.13	3	\$1.48	0%	0%	\$170.51	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	Existing	0.04	3	\$1.48	0%	0%	\$170.51	0.00	0.00	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.35	3	\$1.48	0%	0%	\$170.51	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.12	3	\$1.48	0%	0%	\$170.51	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	Existing	2.37	3	\$1.48	0%	0%	\$170.51	0.00	0.00	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.26	3	\$0.47	10%	62%	\$54.12	30.06	36.47	COM_RCX-HVAC-AEG-1
Grocery	Heating	Retrocommissioning	sqft	Existing	0.32	3	\$0.47	10%	62%	\$54.12	6.98	8.36	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.47	10%	62%	\$54.12	18.52	21.78	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.47	10%	62%	\$54.12	3.28	4.24	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.35	3	\$0.47	10%	62%	\$54.12	37.20	54.49	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.47	10%	62%	\$54.12	14.33	18.90	COM_RCX-Lighting-AEG-1

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Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.37	3	\$0.47	10%	62%	\$54.12	343.99	397.90	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.25	10	\$0.09	0%	0%	\$74.40	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	7.31	10	\$1.12	0%	0%	\$27.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.90	3	\$0.24	0%	0%	\$50.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	3.55	10	\$3.24	0%	0%	\$161.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.71	10	\$0.70	0%	0%	\$175.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	Existing	198.09	16	\$75.53	20%	75%	\$53.30	2.29	2.67	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	3,011.70	25	\$4,625.66	0%	0%	\$184.37	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.05	45	\$0.84	15%	50%	\$1,415.31	1.05	1.13	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$1,415.31	0.06	0.06	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,415.31	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.35	20	\$0.81	45%	50%	\$409.27	1.00	1.08	Building Energy Simulation Tool

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Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$409.27	-0.03	-0.03	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$409.27	-0.13	-0.14	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$2,683.29	0.85	0.91	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,683.29	0.02	0.03	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,683.29	0.11	0.12	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-3.57	18	\$0.59	15%	25%	\$9,999.00	-0.07	-0.07	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.38	18	\$0.59	15%	25%	\$9,999.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.25	18	\$0.59	15%	25%	\$9,999.00	0.01	0.01	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.77	30	\$37.07	66%	66%	\$516.80	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	4.99	30	\$37.07	66%	66%	\$516.80	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.91	30	\$37.07	66%	66%	\$516.80	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,178.31	10	\$914.46	15%	75%	\$49.77	0.01	0.01	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	301.24	15	\$248.07	15%	75%	\$118.33	0.16	0.19	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	754.58	15	\$263.92	15%	75%	\$50.26	0.04	0.05	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	23.43	15	\$248.07	15%	75%	\$1,521.53	0.00	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	25,066.9 ₉	10	\$1,796.53	15%	75%	\$34.62	0.03	0.03	AEG-BEST

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Grocery	Cooling	HVAC - Economizer	HP cool	New	110.99	5	\$267.96	18%	75%	\$650.71	2.34	2.78	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.35	15	\$0.05	10%	15%	\$20.80	0.63	0.73	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.01	14	\$5.25	6%	75%	\$258.94	1.63	1.87	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.60	15	\$0.26	15%	20%	\$61.42	1.83	1.99	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	514.41	15	\$189.00	19%	25%	\$52.78	0.74	0.84	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	185.37	15	\$1,273.23	19%	50%	\$986.76	1.46	1.68	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.39	15	\$0.12	19%	50%	\$43.75	5.14	5.89	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.04	15	\$0.23	1%	34%	\$926.31	0.50	0.58	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.75	15	\$0.76	0%	11%	\$53.13	0.54	0.62	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.31	15	\$0.76	0%	11%	\$53.13	6.15	7.05	HVAC_DOAS-Heating-7PLN-v5-1
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,873.74	15	\$7,501.21	3%	15%	\$77.43	1.38	1.59	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,091.54	15	\$7,501.21	3%	15%	\$77.43	0.67	0.77	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	New	6.95	3	\$33.20	0%	45%	\$1,907.71	0.08	0.10	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	New	303.11	15	\$410.87	3%	45%	\$196.49	19.04	21.07	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	163.38	15	\$698.92	3%	75%	\$620.15	20.42	22.10	RTU_PREC-Cooling-XCELCO-2017-18-1

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Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	212.19	20	\$1,175.09	8%	25%	\$274.80	0.13	0.15	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	336.74	20	\$1,175.09	8%	25%	\$274.80	0.12	0.13	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.56	5	\$0.75	1%	40%	\$110.41	3.76	4.29	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.76	5	\$0.75	1%	40%	\$110.41	0.94	1.07	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.50	5	\$0.75	1%	40%	\$110.41	4.08	4.63	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	117.39	10	\$8.63	3%	65%	\$12.72	0.83	0.98	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	128.99	10	\$17.56	3%	65%	(\$133.93)	0.46	0.54	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	25.49	10	\$16.82	3%	65%	(\$220.99)	0.10	0.12	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	7%	0%	\$10.71	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	477.24	15	\$15.38	1%	75%	\$4.63	2.39	2.74	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	542.68	4	\$75.87	25%	40%	(\$114.89)	0.52	0.62	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.22	0.26	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.12	20	\$258.33	1%	30%	\$2,735.75	3.39	3.88	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.91	15	\$0.36	11%	23%	\$58.72	17.99	20.57	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.27	15	\$0.60	11%	23%	\$69.21	25.18	28.80	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	400.32	15	\$56.14	1%	3%	\$21.35	0.21	0.27	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.31	15	\$65.99	1%	3%	\$192.05	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	7,380.24	11	\$26.48	15%	30%	\$0.62	3.62	4.71	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	755.73	16	\$1,864.95	5%	15%	\$359.22	2.96	3.77	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.07	9	\$0.65	15%	25%	\$119.09	2.87	3.48	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	81.79	8	\$56.85	15%	25%	\$146.82	1.40	1.71	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	102.27	7	\$3,486.31	15%	30%	\$7,847.00	2.39	2.93	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	269.12	12	\$50.74	41%	75%	\$30.11	10.35	11.95	RFG_ASH-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	16.78	4	\$3.68	35%	35%	\$73.22	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	638.70	15	\$347.21	11%	75%	\$79.54	182.64	212.93	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	104.08	2	\$10.74	41%	75%	\$82.38	0.16	0.28	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	15.80	15	\$508.61	21%	38%	\$7,144.93	34.11	39.77	RFG_HECOMP-Refrigeration-AEO17-3
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	277.40	15	\$5,552.98	21%	38%	\$4,827.76	49.89	58.16	RFG_HECOMP-Refrigeration-AEO17-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	668.69	15	\$305.13	41%	75%	\$137.95	28.86	33.65	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,205.06	15	\$539.09	21%	38%	\$65.46	43.35	50.53	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	2,531.86	10	\$449.00	20%	30%	\$31.24	43.06	51.03	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	255.88	16	\$153.90	41%	75%	\$86.15	7.92	9.29	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	92.02	15	\$135.00	21%	38%	\$216.02	0.35	0.41	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	199.94	16	\$105.92	41%	75%	\$88.17	2.67	3.18	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	153.91	10	\$521.11	41%	75%	\$697.33	1.61	1.98	RFG_DDEF-Refrigeration-VTTRM-1
Grocery	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	11.92	8	\$647.70	35%	35%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	512.95	12	\$2,541.64	35%	35%	\$805.77	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	53.88	8	\$15.90	20%	75%	\$58.27	13.79	16.13	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	12.34	8	\$3.87	20%	75%	\$61.92	1.18	1.39	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	43.37	5	\$49.37	20%	75%	\$304.20	0.36	0.43	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	899.86	5	\$288.64	25%	75%	\$85.71	0.85	1.01	VEND_CTRL-Miscellaneous-SCE-17R0-41
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	8,009.63	18	\$8,815.42	25%	50%	\$146.76	5.34	5.78	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	166.11	15	\$335.00	0%	0%	\$123.46	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	223.80	15	\$335.00	0%	0%	\$123.46	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	11.93	4	\$37.32	10%	50%	\$917.11	0.19	0.20	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$6.20	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$6.20	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$6.20	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$23.85	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,440.82	18	\$4,231.40	0%	0%	\$163.98	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.91	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	118.45	7	\$423.28	0%	0%	(\$780.61)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$780.61)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$780.61)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	18,192.13	15	\$1,114.41	0%	0%	\$69.59	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$69.59	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,621.10	6	\$37.07	1%	3%	\$5.40	0.20	0.22	ESTAR_WC-Miscellaneous-7PLN-v6-1
Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.03	20	\$0.27	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	New	0.99	25	\$4.24	10%	15%	\$86.60	1.97	2.11	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	New	1.33	25	\$4.24	10%	15%	\$86.60	0.49	0.53	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.88	25	\$4.24	10%	15%	\$86.60	2.13	2.29	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.59	25	\$4.24	10%	15%	\$86.60	0.89	0.95	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.90	25	\$4.24	10%	15%	\$86.60	16.35	18.26	ADVNC-AII-RSRCH-1

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Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.62	25	\$4.24	10%	15%	\$86.60	4.06	4.42	ADVNC-All-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	New	0.15	3	\$3.97	4%	27%	\$809.27	0.38	0.46	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	New	0.21	3	\$3.97	4%	27%	\$809.27	0.10	0.12	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.14	3	\$3.97	4%	27%	\$809.27	0.42	0.50	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.09	3	\$3.97	4%	27%	\$809.27	0.17	0.21	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.29	3	\$3.97	4%	27%	\$809.27	0.80	1.05	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$3.97	4%	27%	\$809.27	0.26	0.33	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	New	0.96	3	\$3.97	4%	27%	\$809.27	3.02	3.48	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$3.97	4%	27%	\$809.27	0.05	0.06	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	New	0.21	3	\$1.32	10%	62%	\$154.33	6.75	7.46	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	New	0.29	3	\$1.32	10%	62%	\$154.33	1.69	1.87	COM_CX-HVAC-AEG-1
Grocery	Ventilation	Commissioning	sqft	New	0.19	3	\$1.32	10%	62%	\$154.33	7.31	8.06	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	New	0.04	3	\$1.32	10%	62%	\$154.33	1.02	1.12	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	New	0.34	3	\$1.32	10%	62%	\$154.33	46.70	54.48	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	New	0.11	3	\$1.32	10%	62%	\$154.33	11.59	13.10	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	New	2.20	3	\$1.32	10%	62%	\$154.33	471.82	508.46	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	New	0.21	3	\$0.42	0%	0%	\$48.98	0.00	0.00	COM_RCX-HVAC-AEG-1

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Grocery	Heating	Retrocommissioning	sqft	New	0.29	3	\$0.42	0%	0%	\$48.98	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	New	0.19	3	\$0.42	0%	0%	\$48.98	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.42	0%	0%	\$48.98	0.00	0.00	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.34	3	\$0.42	0%	0%	\$48.98	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.42	0%	0%	\$48.98	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	New	2.20	3	\$0.42	0%	0%	\$48.98	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.24	10	\$0.09	0%	0%	\$67.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	6.80	10	\$1.12	0%	0%	\$28.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.76	3	\$0.24	0%	0%	\$52.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	3.31	10	\$3.24	0%	0%	\$166.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.66	10	\$0.70	0%	0%	\$181.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	New	198.09	16	\$75.53	20%	75%	\$53.30	0.31	0.35	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,987.08	25	\$4,620.69	0%	0%	\$186.22	0.00	0.00	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.28	45	\$0.84	15%	35%	\$86.86	7.49	8.42	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.83	45	\$0.84	15%	35%	\$86.86	1.03	1.16	Building Energy Simulation Tool

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Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$86.86	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	0.74	20	\$0.86	15%	35%	\$152.71	19.63	22.07	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$152.71	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$152.71	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.66	20	\$0.81	45%	50%	\$314.73	4.34	4.88	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.24	20	\$0.81	45%	50%	\$314.73	-0.08	-0.08	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.08	20	\$0.81	45%	50%	\$314.73	-0.51	-0.58	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.06	45	\$1.70	15%	35%	\$64.25	-1.40	-1.57	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.38	45	\$1.70	15%	35%	\$64.25	2.56	2.88	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.74	45	\$1.70	15%	35%	\$64.25	17.39	19.79	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	29.75	18	\$0.59	15%	50%	\$9,999.00	9.99	11.23	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-43.52	18	\$0.59	15%	50%	\$9,999.00	-0.68	-0.77	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-13.48	18	\$0.59	15%	50%	\$9,999.00	-4.64	-5.27	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	12.63	30	\$37.07	48%	48%	\$55.39	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	58.91	30	\$37.07	48%	48%	\$55.39	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	10.51	30	\$37.07	48%	48%	\$55.39	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	24,002.73	10	\$914.46	15%	75%	\$6.74	70.90	83.78	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	645.12	15	\$248.07	15%	75%	\$56.47	265.01	313.14	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,379.96	15	\$263.92	15%	75%	\$28.09	56.69	66.98	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	179.48	15	\$248.07	15%	75%	\$200.80	60.18	70.09	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	48,209.80	10	\$1,796.53	15%	75%	\$18.20	116.24	135.38	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	180.28	5	\$267.96	18%	75%	\$406.02	79.52	94.13	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.64	15	\$0.05	5%	15%	\$11.68	18.42	21.83	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.33	14	\$5.25	3%	75%	\$182.24	10.53	12.48	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.84	15	\$0.26	15%	20%	\$45.07	11.36	12.92	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	2,080.75	15	\$189.00	13%	25%	\$13.41	14.75	17.74	VENT_PMSM-Ventilation-AEG-2016-2
Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	749.80	15	\$1,273.23	13%	50%	\$250.68	16.70	20.09	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.54	15	\$0.04	13%	50%	\$11.11	58.70	70.61	FAN_VSD-Ventilation-MIDATL-v3.0-13
Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.05	15	\$0.23	10%	20%	\$679.68	1.40	1.68	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	2.27	15	\$0.76	3%	7%	\$31.59	0.97	1.15	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.25	15	\$0.76	3%	7%	\$31.59	11.66	14.02	HVAC_DOAS-Heating-7PLN-v5-1

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Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	7,003.58	15	\$7,501.21	15%	15%	\$29.39	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	30,224.63	15	\$7,501.21	15%	15%	\$29.39	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,593.37	0.30	0.37	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	Existing	449.90	15	\$410.87	15%	45%	\$134.46	14.69	16.69	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	242.50	15	\$698.92	15%	75%	\$424.37	15.25	16.90	RTU_PREC-Cooling-XCELCO-2017-18-1
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	367.86	20	\$1,077.17	15%	25%	\$102.49	0.14	0.17	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	1,001.30	20	\$1,077.17	15%	25%	\$102.49	0.07	0.08	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.02	5	\$0.75	30%	40%	\$51.21	26.92	30.26	STAT_WIFI-AII-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	2.27	5	\$0.75	30%	40%	\$51.21	2.80	3.15	STAT_WIFI-AII-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.70	5	\$0.75	30%	40%	\$51.21	19.02	21.63	STAT_WIFI-AII-7PLN-v2-1
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	366.56	10	\$8.63	25%	65%	\$4.19	2.22	2.69	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	402.78	10	\$17.56	25%	65%	(\$44.10)	1.22	1.48	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	79.59	10	\$16.82	25%	65%	(\$72.77)	0.24	0.28	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	619.87	11	\$37.97	15%	30%	\$10.53	4.23	4.79	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,490.64	15	\$15.38	16%	75%	\$1.52	5.49	6.56	AEG-BEST

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Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,694.60	4	\$75.87	25%	40%	(\$37.83)	3.79	4.54	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	100.10	2	\$5.13	15%	75%	\$29.18	2.98	3.57	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.68	20	\$258.33	1%	30%	\$2,688.85	9.50	11.36	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.89	15	\$0.36	3%	23%	\$67.84	54.12	67.66	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.25	15	\$0.60	3%	23%	\$79.96	75.76	94.73	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	301.44	15	\$56.14	1%	3%	\$31.67	1.50	2.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	49.65	15	\$65.99	1%	3%	\$225.98	0.05	0.07	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	5,995.67	11	\$26.48	15%	30%	\$0.93	18.03	28.77	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	613.95	16	\$1,864.95	5%	15%	\$533.65	12.31	19.64	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.69	9	\$0.65	15%	25%	\$75.81	8.99	11.39	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	116.91	8	\$56.85	15%	25%	\$103.41	4.78	6.06	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	146.19	7	\$3,486.31	15%	30%	\$5,526.78	8.96	11.36	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	23.01	12	\$50.74	4%	25%	\$367.87	0.88	1.05	RFG_ASH-Refrigeration-7PLN-v6-1

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Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	8.10	4	\$24.51	4%	25%	\$1,166.51	0.21	0.30	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	35.54	15	\$347.21	0%	0%	\$1,531.13	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	30.46	2	\$10.74	4%	25%	\$296.75	0.33	0.64	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.88	15	\$508.61	2%	13%	\$9,999.00	4.68	5.90	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	15.44	15	\$5,552.98	2%	13%	\$9,999.00	6.84	8.63	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	111.63	15	\$305.13	4%	25%	\$885.13	3.96	4.99	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	447.04	15	\$539.09	2%	13%	\$189.00	5.95	7.50	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	939.25	10	\$449.00	0%	0%	\$90.19	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	53.21	16	\$153.90	4%	25%	\$450.68	0.65	0.85	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	19.14	15	\$135.00	2%	13%	\$1,130.09	0.03	0.04	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	295.97	16	\$105.92	4%	25%	\$67.50	1.06	1.73	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	227.84	10	\$521.11	4%	25%	\$533.79	0.82	1.34	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	97.70	8	\$18,135.52	4%	25%	\$9,999.00	0.04	0.07	RFG_ADC-Refrigeration-PGE-R6-1

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Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	190.29	12	\$605.15	4%	25%	\$553.94	5.06	6.38	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	10.27	8	\$15.90	0%	0%	\$320.04	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.06	8	\$3.87	0%	0%	\$755.70	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.72	5	\$49.37	0%	0%	\$3,711.80	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	875.74	5	\$288.64	25%	75%	\$92.47	3.86	4.66	VEND_CTRL-Miscellaneous-SCE-17R0-34
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	11,217.00	18	\$8,815.42	25%	50%	\$107.68	30.50	34.69	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	324.62	15	\$335.00	0%	0%	\$41.24	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	860.23	15	\$335.00	0%	0%	\$41.24	0.00	0.00	AEG - BEST
Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	27.66	4	\$37.32	10%	50%	\$404.00	7.66	8.12	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$5.82	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$5.82	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$5.82	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$104.49	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	7,227.98	18	\$4,231.40	0%	5%	\$80.21	3.25	3.70	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	588.70	12	\$2,098.57	5%	7%	\$594.64	0.06	0.07	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.02	10	\$0.85	0%	5%	\$7,856.00	0.04	0.05	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	369.89	7	\$423.28	0%	5%	(\$220.03)	0.02	0.03	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	31.37	7	\$423.28	0%	5%	(\$220.03)	0.01	0.01	CW-Miscellaneous-RTF-v5.1-21
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	31.37	7	\$423.28	0%	5%	(\$220.03)	0.01	0.01	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	56,807.47	15	\$1,114.41	0%	5%	\$22.34	3.53	4.22	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,501.28	15	\$1,114.41	0%	5%	\$22.34	0.42	0.51	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	18,793.85	6	\$37.07	1%	3%	\$0.47	12.98	14.27	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.10	20	\$0.95	0%	5%	\$1,307.26	1.06	1.25	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.13	25	\$4.24	0%	0%	\$67.31	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	Existing	3.22	25	\$4.24	0%	0%	\$67.31	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.89	25	\$4.24	0%	0%	\$67.31	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	1.16	25	\$4.24	0%	0%	\$67.31	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.74	25	\$4.24	0%	0%	\$67.31	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.24	0%	0%	\$67.31	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	Existing	0.28	3	\$3.01	4%	28%	\$745.24	19.16	22.71	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	Existing	0.62	3	\$3.01	4%	28%	\$745.24	1.99	2.36	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.19	3	\$3.01	4%	28%	\$745.24	13.54	16.28	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$3.01	4%	28%	\$745.24	1.70	2.04	COM_SEM-Water Heating-AEG-1
Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.30	3	\$3.01	4%	28%	\$745.24	16.27	23.30	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$3.01	4%	28%	\$745.24	2.13	2.70	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$3.01	4%	28%	\$745.24	2.33	2.73	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$3.01	4%	28%	\$745.24	3.01	3.19	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	Existing	0.38	3	\$3.76	0%	0%	\$759.58	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	Existing	0.85	3	\$3.76	0%	0%	\$759.58	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	Existing	0.26	3	\$3.76	0%	0%	\$759.58	0.00	0.00	COM_CX-HVAC-AEG-1

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Health	Water Heating	Commissioning	sqft	Existing	0.09	3	\$3.76	0%	0%	\$759.58	0.00	0.00	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	Existing	0.34	3	\$3.76	0%	0%	\$759.58	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$3.76	0%	0%	\$759.58	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	Existing	0.08	3	\$3.76	0%	0%	\$759.58	0.00	0.00	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	Existing	0.38	3	\$1.19	15%	55%	\$241.09	44.21	52.40	COM_RCX-HVAC-AEG-1
Health	Heating	Retrocommissioning	sqft	Existing	0.85	3	\$1.19	15%	55%	\$241.09	4.60	5.45	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	Existing	0.26	3	\$1.19	15%	55%	\$241.09	31.24	37.58	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	Existing	0.09	3	\$1.19	15%	55%	\$241.09	1.31	1.57	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.34	3	\$1.19	15%	55%	\$241.09	31.28	44.81	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$1.19	15%	55%	\$241.09	4.09	5.19	COM_RCX-Lighting-AEG-1
Health	Refrigeration	Retrocommissioning	sqft	Existing	0.08	3	\$1.19	15%	55%	\$241.09	8.95	10.49	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.24	10	\$0.09	0%	0%	\$75.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.23	10	\$1.12	0%	0%	\$872.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.06	3	\$0.24	0%	0%	\$1,632.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.11	10	\$3.24	0%	0%	\$5,175.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$5,616.49	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	Existing	212.21	16	\$75.53	20%	75%	\$49.75	1.79	2.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	17,263.95	25	\$24,582.68	0%	75%	\$146.79	0.00	0.00	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.02	45	\$0.84	15%	50%	\$217.18	0.33	0.35	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.38	45	\$0.84	15%	50%	\$217.18	0.23	0.25	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$217.18	0.46	0.49	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.39	20	\$0.86	15%	50%	\$276.61	5.27	5.66	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$276.61	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$276.61	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.14	20	\$0.81	45%	50%	\$9,999.00	0.27	0.30	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.19	20	\$0.81	45%	50%	\$9,999.00	-0.02	-0.02	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.81	45%	50%	\$9,999.00	-0.10	-0.11	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$322.72	0.07	0.07	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.46	45	\$1.70	15%	50%	\$322.72	0.24	0.26	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.13	45	\$1.70	15%	50%	\$322.72	1.55	1.67	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	18.42	18	\$0.59	15%	35%	\$0.34	0.99	1.07	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	166.40	18	\$0.59	15%	35%	\$0.34	0.40	0.44	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	46.96	18	\$0.59	15%	35%	\$0.34	2.56	2.77	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	8.81	30	\$37.07	66%	66%	\$69.94	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	47.37	30	\$37.07	66%	66%	\$69.94	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	7.70	30	\$37.07	66%	66%	\$69.94	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	16,313.51	10	\$914.46	15%	75%	\$9.45	6.58	7.55	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	438.46	15	\$248.07	15%	75%	\$79.26	30.51	34.58	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	937.89	15	\$263.92	15%	75%	\$39.42	6.53	7.40	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	127.79	15	\$248.07	15%	75%	\$270.65	7.16	8.10	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	32,637.79	10	\$1,796.53	15%	75%	\$25.80	10.60	12.13	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	New	125.39	5	\$267.96	18%	75%	\$559.01	4.45	5.19	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.45	15	\$0.05	10%	15%	\$16.03	1.08	1.23	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.48	14	\$5.25	6%	75%	\$224.31	1.28	1.48	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.61	15	\$0.26	15%	20%	\$59.96	2.12	2.30	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,440.13	15	\$189.00	19%	25%	\$18.85	0.86	0.98	VENT_PMSM-Ventilation-AEG-2016-2

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Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	518.95	15	\$1,273.23	19%	50%	\$352.43	1.70	1.95	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.40	15	\$0.04	19%	50%	\$15.63	5.97	6.84	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.04	15	\$0.23	10%	20%	\$904.27	0.17	0.20	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.81	15	\$0.76	3%	7%	\$46.58	0.13	0.14	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.54	15	\$0.76	3%	7%	\$46.58	0.84	0.97	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,882.94	15	\$7,501.21	3%	15%	\$36.88	2.37	2.69	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	24,304.32	15	\$7,501.21	3%	15%	\$36.88	0.53	0.61	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	New	7.00	3	\$33.20	0%	45%	\$1,891.31	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	New	372.86	15	\$410.87	3%	45%	\$159.61	4.46	4.93	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	200.97	15	\$698.92	3%	75%	\$503.73	4.77	5.17	RTU_PREC-Cooling-XCELCO-2017-18-1
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	291.36	20	\$1,077.17	8%	25%	\$122.99	0.04	0.05	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	832.92	20	\$1,077.17	8%	25%	\$122.99	0.02	0.02	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.71	5	\$0.75	1%	40%	\$65.60	6.44	7.26	STAT_WIFI-AII-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.83	5	\$0.75	1%	40%	\$65.60	0.74	0.85	STAT_WIFI-AII-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.52	5	\$0.75	1%	40%	\$65.60	4.73	5.37	STAT_WIFI-AII-7PLN-v2-1

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Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	175.18	10	\$8.63	3%	65%	\$8.52	0.38	0.44	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	192.49	10	\$17.56	3%	65%	(\$89.74)	0.21	0.24	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	38.04	10	\$16.82	3%	65%	(\$148.09)	0.05	0.05	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	7%	30%	\$10.71	1.29	1.42	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,424.78	15	\$15.38	1%	75%	\$1.55	1.09	1.25	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	809.86	4	\$75.87	25%	40%	(\$76.98)	0.24	0.28	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.10	0.12	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.12	20	\$258.33	1%	30%	\$2,735.70	1.54	1.77	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.86	15	\$0.36	11%	23%	\$62.25	19.23	21.93	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.20	15	\$0.60	11%	23%	\$73.37	26.93	30.70	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	288.19	15	\$56.14	1%	3%	\$29.51	0.24	0.29	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.22	15	\$65.99	1%	3%	\$191.44	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	5,946.79	11	\$26.48	15%	30%	\$0.77	3.32	4.30	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	608.94	16	\$1,864.95	5%	15%	\$445.37	2.71	3.45	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.56	9	\$0.65	15%	25%	\$77.52	1.09	1.30	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	108.24	8	\$56.85	15%	25%	\$105.73	0.53	0.64	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	135.34	7	\$3,486.31	15%	30%	\$5,650.88	0.91	1.09	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	21.66	12	\$50.74	4%	25%	\$374.07	0.13	0.14	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	7.02	4	\$24.51	4%	25%	\$1,264.61	0.01	0.02	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	32.85	15	\$347.21	0%	0%	\$1,574.72	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	24.09	2	\$10.74	4%	25%	\$355.26	0.01	0.02	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.81	15	\$508.61	2%	13%	\$9,999.00	0.74	0.87	RFG_HECOMP-Refrigeration-AEO17-3
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	14.27	15	\$5,552.98	2%	13%	\$9,999.00	1.09	1.28	RFG_HECOMP-Refrigeration-AEO17-5
Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	103.19	15	\$305.13	4%	25%	\$910.33	0.63	0.74	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	413.24	15	\$539.09	2%	13%	\$194.38	0.94	1.11	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	868.23	10	\$449.00	0%	0%	\$92.76	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	48.49	16	\$153.90	4%	25%	\$469.13	0.11	0.13	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	17.44	15	\$135.00	2%	13%	\$1,176.33	0.00	0.01	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	245.60	16	\$105.92	4%	25%	\$76.29	0.17	0.23	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	189.07	10	\$521.11	4%	25%	\$603.36	0.10	0.14	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.76	8	\$647.70	4%	25%	\$9,999.00	0.00	0.01	RFG_ASH-Refrigeration-NMTRM-2016-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	175.90	12	\$5,648.09	4%	25%	\$5,317.31	0.72	0.85	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	9.64	8	\$15.90	0%	0%	\$325.82	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.99	8	\$3.87	0%	0%	\$769.35	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.49	5	\$49.37	0%	0%	\$3,779.64	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	817.65	5	\$288.64	25%	75%	\$94.32	0.29	0.34	VEND_CTRL-Miscellaneous-SCE-17R0-41
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	8,203.87	18	\$8,815.42	25%	50%	\$143.26	6.20	6.70	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	257.11	15	\$335.00	0%	0%	\$49.49	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	715.57	15	\$335.00	0%	0%	\$49.49	0.00	0.00	AEG - BEST

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Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	26.98	4	\$37.32	10%	50%	\$412.31	0.47	0.51	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$5.45	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$5.45	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$5.45	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$42.37	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	5,286.39	18	\$4,231.40	0%	5%	\$106.72	0.66	0.71	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	554.26	12	\$2,098.57	5%	7%	\$604.65	0.01	0.01	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.02	10	\$0.79	0%	5%	\$7,416.18	0.00	0.01	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	353.54	7	\$423.28	0%	5%	(\$223.60)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	30.00	7	\$423.28	0%	5%	(\$223.60)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	30.00	7	\$423.28	0%	5%	(\$223.60)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	54,297.35	15	\$1,114.41	0%	5%	\$22.73	0.56	0.64	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,389.30	15	\$1,114.41	0%	5%	\$22.73	0.07	0.08	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	9,396.93	6	\$37.07	1%	3%	\$0.93	1.74	1.90	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.09	20	\$0.85	0%	5%	\$1,183.00	0.17	0.20	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	New	1.25	25	\$4.24	10%	25%	\$62.90	10.07	10.76	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	New	3.21	25	\$4.24	10%	25%	\$62.90	1.16	1.25	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.90	25	\$4.24	10%	25%	\$62.90	7.39	7.92	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	New	1.17	25	\$4.24	10%	25%	\$62.90	1.21	1.29	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.83	25	\$4.24	10%	25%	\$62.90	53.48	59.57	ADVNC-AII-RSRCH-1
Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.19	25	\$4.24	10%	25%	\$62.90	4.60	4.98	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	New	0.19	3	\$1.98	4%	28%	\$566.89	0.69	0.81	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	New	0.50	3	\$1.98	4%	28%	\$566.89	0.08	0.10	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	New	0.14	3	\$1.98	4%	28%	\$566.89	0.51	0.60	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	New	0.18	3	\$1.98	4%	28%	\$566.89	0.08	0.10	COM_SEM-Water Heating-AEG-1

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Health	Interior Lighting	Strategic Energy Management	sqft	New	0.28	3	\$1.98	4%	28%	\$566.89	0.92	1.20	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$1.98	4%	28%	\$566.89	0.11	0.13	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$1.98	4%	28%	\$566.89	0.11	0.13	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$1.98	4%	28%	\$566.89	0.14	0.15	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	New	0.27	3	\$2.33	15%	55%	\$559.97	8.87	9.72	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	New	0.69	3	\$2.33	15%	55%	\$559.97	1.02	1.13	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	New	0.19	3	\$2.33	15%	55%	\$559.97	6.50	7.17	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	New	0.08	3	\$2.33	15%	55%	\$559.97	0.35	0.39	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	New	0.33	3	\$2.33	15%	55%	\$559.97	39.22	45.64	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$2.33	15%	55%	\$559.97	3.38	3.78	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	New	0.07	3	\$2.33	15%	55%	\$559.97	11.63	12.55	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	New	0.27	3	\$0.74	0%	0%	\$177.73	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Heating	Retrocommissioning	sqft	New	0.69	3	\$0.74	0%	0%	\$177.73	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	New	0.19	3	\$0.74	0%	0%	\$177.73	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	New	0.08	3	\$0.74	0%	0%	\$177.73	0.00	0.00	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	New	0.33	3	\$0.74	0%	0%	\$177.73	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.74	0%	0%	\$177.73	0.00	0.00	COM_RCX-Lighting-AEG-1

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Health	Refrigeration	Retrocommissioning	sqft	New	0.07	3	\$0.74	0%	0%	\$177.73	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.23	10	\$0.09	0%	0%	\$70.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.21	10	\$1.12	0%	0%	\$911.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.06	3	\$0.24	0%	0%	\$1,703.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.10	10	\$3.24	0%	0%	\$5,402.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$5,861.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	New	212.21	16	\$75.53	20%	75%	\$49.75	0.25	0.29	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	16,859.74	25	\$25,075.88	0%	75%	\$156.88	0.00	0.00	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$164.64	0.65	0.75	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.58	45	\$0.84	15%	35%	\$164.64	5.12	5.87	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$164.64	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.39	20	\$0.86	15%	35%	\$299.61	6.61	7.63	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$299.61	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$299.61	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.29	20	\$0.81	45%	50%	\$4,273.64	2.45	2.82	Building Energy Simulation Tool

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College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.22	20	\$0.81	45%	50%	\$4,273.64	-0.48	-0.55	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$4,273.64	-0.37	-0.42	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.26	45	\$1.70	15%	35%	\$324.66	-2.81	-3.24	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.74	45	\$1.70	15%	35%	\$324.66	2.03	2.33	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.13	45	\$1.70	15%	35%	\$324.66	1.57	1.78	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	17.58	18	\$0.59	15%	50%	\$23.75	4.21	4.86	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-11.86	18	\$0.59	15%	50%	\$23.75	-0.73	-0.84	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.13	18	\$0.59	15%	50%	\$23.75	-0.57	-0.64	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.89	30	\$37.07	48%	48%	\$87.95	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	41.44	30	\$37.07	48%	48%	\$87.95	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.30	30	\$37.07	48%	48%	\$87.95	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	10,945.74	10	\$914.46	15%	75%	\$15.10	8.06	9.89	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	314.53	15	\$248.07	15%	75%	\$118.42	32.20	39.51	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	724.85	15	\$263.92	15%	75%	\$54.67	7.42	9.11	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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College	Cooling	HVAC - Economizer	HP cool	Existing	77.07	5	\$267.96	18%	75%	\$960.73	20.15	24.45	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.29	15	\$0.05	5%	15%	\$26.60	5.37	6.59	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.14	14	\$5.25	3%	75%	\$710.01	21.77	26.49	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.28	15	\$0.26	15%	20%	\$133.48	2.67	3.02	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	507.12	15	\$189.00	13%	25%	\$54.64	3.48	4.16	VENT_PMSM-Ventilation-AEG-2016-2
College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	182.74	15	\$1,273.23	13%	50%	\$1,021.44	3.94	4.71	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.18	15	\$0.06	13%	50%	\$45.29	13.86	16.54	FAN_VSD-Ventilation-MIDATL-v3.0-13
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	10%	25%	\$2,013.16	0.50	0.60	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.31	15	\$0.76	3%	8%	\$58.49	3.04	3.70	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.61	15	\$0.76	3%	8%	\$58.49	6.12	7.30	HVAC_DOAS-Heating-7PLN-v5-1
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,134.23	15	\$7,501.21	15%	25%	\$54.30	5.07	6.22	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	17,441.70	15	\$7,501.21	15%	25%	\$54.30	7.25	8.82	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	0.99	1.21	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	Existing	179.15	15	\$410.87	15%	45%	\$337.67	18.99	21.58	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	96.56	15	\$698.92	15%	75%	\$1,065.71	19.67	21.80	RTU_PREC-Cooling-XCELCO-2017-18-1

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College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	146.41	20	\$979.24	15%	25%	\$161.77	0.34	0.41	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	638.60	20	\$979.24	15%	25%	\$161.77	4.30	4.93	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.46	5	\$0.75	30%	40%	\$103.86	7.81	9.01	STAT_WIFI-All-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.31	5	\$0.75	30%	40%	\$103.86	5.76	6.61	STAT_WIFI-All-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.24	5	\$0.75	30%	40%	\$103.86	4.47	5.06	STAT_WIFI-All-7PLN-v2-1
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	165.74	10	\$8.63	25%	65%	\$9.43	2.98	3.68	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	182.12	10	\$17.56	25%	65%	(\$99.36)	1.64	2.02	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	35.99	10	\$16.82	25%	65%	(\$163.96)	0.32	0.39	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	613.41	11	\$37.97	15%	20%	\$10.84	1.88	2.16	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	673.85	15	\$15.38	16%	75%	\$3.44	7.36	8.96	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	766.24	4	\$75.87	25%	40%	(\$85.24)	5.09	6.20	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.05	2	\$5.13	15%	75%	\$30.04	4.00	4.87	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.55	20	\$258.33	1%	30%	\$2,769.01	12.74	15.51	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.48	15	\$0.36	3%	23%	\$125.91	20.18	25.24	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.68	15	\$0.60	3%	23%	\$148.39	28.26	35.33	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	302.96	15	\$56.14	1%	3%	\$31.36	0.53	0.77	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	49.35	15	\$65.99	1%	3%	\$226.29	0.02	0.03	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,227.66	11	\$26.48	15%	30%	\$1.75	6.57	10.69	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	330.51	16	\$1,864.95	5%	15%	\$1,006.67	4.49	7.30	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.49	9	\$0.65	15%	25%	\$292.60	6.54	9.55	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	44.68	8	\$56.85	15%	25%	\$301.65	3.48	5.08	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	55.87	7	\$3,486.31	15%	30%	\$9,999.00	6.52	9.52	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	13.62	12	\$50.74	4%	25%	\$621.31	0.11	0.14	RFG_ASH-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.43	4	\$24.51	4%	25%	\$1,631.86	0.03	0.05	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	21.75	15	\$347.21	0%	0%	\$2,507.63	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	17.67	2	\$10.74	4%	25%	\$516.82	0.04	0.08	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.54	15	\$508.61	2%	13%	\$9,999.00	0.62	0.79	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.45	15	\$5,552.98	2%	13%	\$9,999.00	0.91	1.15	RFG_HECOMP-Refrigeration-AEO15-4

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College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	68.31	15	\$305.13	4%	25%	\$1,449.63	0.53	0.67	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	273.56	15	\$539.09	2%	13%	\$309.54	0.79	1.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	574.75	10	\$449.00	0%	0%	\$147.71	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	31.30	16	\$153.90	4%	25%	\$768.55	0.08	0.11	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	11.26	15	\$135.00	2%	13%	\$1,927.14	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	214.51	16	\$105.92	4%	25%	\$87.38	0.19	0.28	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	165.13	10	\$521.11	4%	25%	\$691.06	0.15	0.22	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	56.68	8	\$18,135.52	4%	25%	\$9,999.00	0.00	0.01	RFG_ADC-Refrigeration-PGE-R6-1
College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	116.44	12	\$605.15	4%	25%	\$907.23	0.67	0.85	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.08	8	\$15.90	0%	0%	\$540.52	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.63	8	\$3.87	0%	0%	\$1,276.31	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.20	5	\$49.37	0%	0%	\$6,268.93	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,613.46	5	\$288.64	25%	75%	\$50.19	0.94	1.14	VEND_CTRL-Miscellaneous-SCE-17R0-31
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,760.90	18	\$8,815.42	25%	50%	\$318.95	7.16	8.11	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	138.46	15	\$335.00	0%	0%	\$70.54	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	551.46	15	\$335.00	0%	0%	\$70.54	0.00	0.00	AEG - BEST
College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	23.18	4	\$37.32	10%	50%	\$480.47	4.50	4.75	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.12	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.12	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.12	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$25.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,423.44	18	\$4,231.40	0%	5%	\$237.58	0.76	0.87	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	695.31	12	\$2,098.57	5%	7%	\$502.80	0.02	0.02	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-1

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College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	142.99	10	\$19.59	15%	75%	\$24.46	0.49	0.55	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	64.62	5	\$37,813.23	15%	75%	\$9,999.00	0.10	0.12	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.30	0%	5%	\$6,154.97	0.05	0.06	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	167.25	7	\$423.28	0%	5%	(\$557.85)	0.03	0.04	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.16	7	\$423.28	0%	5%	(\$557.85)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.16	7	\$423.28	0%	5%	(\$557.85)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	25,686.35	15	\$1,114.41	0%	5%	\$51.33	4.74	5.77	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	151.26	15	\$1,114.41	0%	5%	\$51.33	0.01	0.01	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,339.04	6	\$37.07	1%	3%	\$6.54	0.64	0.70	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.12	0%	5%	\$1,307.26	0.11	0.13	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
College	Cooling	Advanced New Construction Designs	sqft	Existing	0.52	25	\$4.24	0%	0%	\$123.38	0.00	0.00	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	Existing	2.06	25	\$4.24	0%	0%	\$123.38	0.00	0.00	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.24	0%	0%	\$123.38	0.00	0.00	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.52	25	\$4.24	0%	0%	\$123.38	0.00	0.00	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.87	25	\$4.24	0%	0%	\$123.38	0.00	0.00	ADVNC-AII-RSRCH-1

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College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.24	0%	0%	\$123.38	0.00	0.00	ADVNC-All-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	Existing	0.12	3	\$0.80	3%	29%	\$393.75	6.05	7.43	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	Existing	0.36	3	\$0.80	3%	29%	\$393.75	4.46	5.43	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	Existing	0.06	3	\$0.80	3%	29%	\$393.75	3.46	4.13	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.80	3%	29%	\$393.75	2.48	3.01	COM_SEM-Water Heating-AEG-1
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.80	3%	29%	\$393.75	6.21	8.86	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.80	3%	29%	\$393.75	1.68	2.45	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.80	3%	29%	\$393.75	0.39	0.39	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.80	3%	29%	\$393.75	1.91	2.02	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	Existing	0.17	3	\$1.01	0%	0%	\$413.59	0.00	0.00	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	Existing	0.49	3	\$1.01	0%	0%	\$413.59	0.00	0.00	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	Existing	0.09	3	\$1.01	0%	0%	\$413.59	0.00	0.00	COM_CX-HVAC-AEG-1
College	Water Heating	Commissioning	sqft	Existing	0.04	3	\$1.01	0%	0%	\$413.59	0.00	0.00	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	Existing	0.17	3	\$1.01	0%	0%	\$413.59	0.00	0.00	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$1.01	0%	0%	\$413.59	0.00	0.00	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$1.01	0%	0%	\$413.59	0.00	0.00	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	Existing	0.17	3	\$0.32	11%	52%	\$131.28	13.21	16.21	COM_RCX-HVAC-AEG-1

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College	Heating	Retrocommissioning	sqft	Existing	0.49	3	\$0.32	11%	52%	\$131.28	9.75	11.86	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	Existing	0.09	3	\$0.32	11%	52%	\$131.28	7.56	9.02	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.32	11%	52%	\$131.28	1.80	2.19	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.17	3	\$0.32	11%	52%	\$131.28	11.29	16.12	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.32	11%	52%	\$131.28	3.05	4.46	COM_RCX-Lighting-AEG-1
College	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.32	11%	52%	\$131.28	1.41	1.43	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$149.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.12	0%	0%	\$4,335.30	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$8,108.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	Existing	94.81	16	\$75.53	20%	75%	\$111.36	0.56	0.65	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,178.73	25	\$1,704.50	0%	75%	\$150.29	0.00	0.00	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$906.11	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.11	45	\$0.84	15%	50%	\$906.11	0.50	0.54	Building Energy Simulation Tool

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College	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$906.11	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.24	20	\$0.86	15%	50%	\$468.46	2.22	2.40	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$468.46	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$468.46	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.81	45%	50%	\$4,427.86	0.21	0.22	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.81	45%	50%	\$4,427.86	-0.03	-0.03	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$4,427.86	-0.03	-0.03	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$3,238.04	-0.10	-0.11	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$3,238.04	0.09	0.10	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$3,238.04	0.08	0.09	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	11.02	18	\$0.59	15%	35%	\$9,999.00	0.45	0.49	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-12.29	18	\$0.59	15%	35%	\$9,999.00	-0.13	-0.14	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-2.47	18	\$0.59	15%	35%	\$9,999.00	-0.11	-0.12	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.48	30	\$37.07	66%	66%	\$98.38	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	New	36.90	30	\$37.07	66%	66%	\$98.38	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.27	30	\$37.07	66%	66%	\$98.38	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	6,262.36	10	\$914.46	15%	75%	\$25.26	0.68	0.79	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	179.95	15	\$248.07	15%	75%	\$198.08	3.36	3.85	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	414.71	15	\$263.92	15%	75%	\$91.45	0.77	0.89	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	48.68	5	\$267.96	18%	75%	\$1,478.23	1.08	1.28	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.19	15	\$0.05	10%	15%	\$39.40	0.32	0.36	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.01	14	\$5.25	6%	75%	\$773.91	3.23	3.72	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.28	15	\$0.26	15%	20%	\$132.22	0.71	0.77	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	501.73	15	\$189.00	19%	25%	\$54.10	0.29	0.33	VENT_PMSM-Ventilation-AEG-2016-2
College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	180.80	15	\$1,273.23	19%	50%	\$1,011.35	0.57	0.65	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.18	15	\$0.06	19%	50%	\$44.84	2.00	2.29	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	25%	\$1,994.16	0.09	0.10	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.16	15	\$0.76	3%	8%	\$62.16	0.48	0.55	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.61	15	\$0.76	3%	8%	\$62.16	1.06	1.21	HVAC_DOAS-Heating-7PLN-v5-1

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College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,039.39	15	\$7,501.21	3%	25%	\$61.65	1.29	1.48	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,531.78	15	\$7,501.21	3%	25%	\$61.65	2.49	2.86	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	New	5.79	3	\$33.20	0%	45%	\$2,290.48	0.05	0.06	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	New	122.65	15	\$410.87	3%	45%	\$485.66	5.06	5.60	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	New	66.11	15	\$698.92	3%	75%	\$1,532.78	5.42	5.86	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	115.96	20	\$979.24	8%	25%	\$173.96	0.10	0.12	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	606.65	20	\$979.24	8%	25%	\$173.96	1.45	1.64	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	1%	40%	\$118.81	1.87	2.13	STAT_WIFI-All-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.17	5	\$0.75	1%	40%	\$118.81	1.87	2.13	STAT_WIFI-All-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.23	5	\$0.75	1%	40%	\$118.81	1.58	1.80	STAT_WIFI-All-7PLN-v2-1
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	160.09	10	\$8.63	3%	65%	\$9.32	0.56	0.66	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	175.91	10	\$17.56	3%	65%	(\$98.20)	0.31	0.36	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	34.76	10	\$16.82	3%	65%	(\$162.04)	0.07	0.08	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	7%	20%	\$10.71	1.08	1.18	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	650.86	15	\$15.38	1%	75%	\$3.40	1.61	1.85	AEG-BEST

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College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	740.10	4	\$75.87	25%	40%	(\$84.24)	0.35	0.42	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.15	0.18	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.12	20	\$258.33	1%	30%	\$2,736.65	2.29	2.62	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.46	15	\$0.36	11%	23%	\$114.30	7.76	8.78	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.65	15	\$0.60	11%	23%	\$134.71	10.86	12.29	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	290.70	15	\$56.14	1%	3%	\$28.64	0.09	0.11	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.34	15	\$65.99	1%	3%	\$186.99	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,221.93	11	\$26.48	15%	30%	\$1.43	1.33	1.72	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	329.92	16	\$1,864.95	5%	15%	\$821.77	1.09	1.38	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.47	9	\$0.65	15%	25%	\$258.05	1.04	1.29	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	43.46	8	\$56.85	15%	25%	\$266.03	0.51	0.63	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	54.35	7	\$3,486.31	15%	30%	\$9,999.00	0.87	1.08	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	12.82	12	\$50.74	4%	25%	\$631.77	0.02	0.02	RFG_ASH-Refrigeration-7PLN-v6-1

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College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.81	4	\$24.51	4%	25%	\$1,728.91	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	20.20	15	\$347.21	0%	0%	\$2,566.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	14.05	2	\$10.74	4%	25%	\$612.34	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.50	15	\$508.61	2%	13%	\$9,999.00	0.10	0.12	RFG_HECOMP-Refrigeration-AEO17-3
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.77	15	\$5,552.98	2%	13%	\$9,999.00	0.15	0.18	RFG_HECOMP-Refrigeration-AEO17-5
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	63.45	15	\$305.13	4%	25%	\$1,483.51	0.09	0.10	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	254.10	15	\$539.09	2%	13%	\$316.78	0.13	0.16	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	533.87	10	\$449.00	0%	0%	\$151.17	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	28.64	16	\$153.90	4%	25%	\$800.09	0.01	0.02	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	10.30	15	\$135.00	2%	13%	\$2,006.22	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	184.40	16	\$105.92	4%	25%	\$95.39	0.04	0.04	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	141.95	10	\$521.11	4%	25%	\$754.39	0.02	0.03	RFG_DDEF-Refrigeration-VTTRM-1

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College	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.61	8	\$647.70	4%	25%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	108.16	12	\$5,648.09	4%	25%	\$8,665.31	0.10	0.12	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.71	8	\$15.90	0%	0%	\$550.28	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.59	8	\$3.87	0%	0%	\$1,299.38	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.07	5	\$49.37	0%	0%	\$6,383.51	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,506.43	5	\$288.64	25%	75%	\$51.20	0.07	0.08	VEND_CTRL-Miscellaneous-SCE-17R0-41
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,719.31	18	\$8,815.42	25%	50%	\$315.93	2.07	2.24	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	109.66	15	\$335.00	0%	0%	\$75.90	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	524.52	15	\$335.00	0%	0%	\$75.90	0.00	0.00	AEG - BEST
College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	22.60	4	\$37.32	10%	50%	\$491.37	0.29	0.31	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.88	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$11.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,396.64	18	\$4,231.40	0%	5%	\$235.34	0.22	0.24	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	656.34	12	\$2,098.57	5%	7%	\$510.60	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
College	Miscellaneous	Pool Pump - Timer	perBldg	New	137.64	10	\$19.59	15%	75%	\$24.62	0.10	0.11	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	New	63.74	5	\$37,813.23	15%	75%	\$9,999.00	0.01	0.01	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.28	0%	5%	\$5,697.33	0.01	0.01	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	161.54	7	\$423.28	0%	5%	(\$551.74)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.02	7	\$423.28	0%	5%	(\$551.74)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.02	7	\$423.28	0%	5%	(\$551.74)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	24,810.01	15	\$1,114.41	0%	5%	\$50.74	0.83	0.95	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	139.98	15	\$1,114.41	0%	5%	\$50.74	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,339.04	6	\$37.07	1%	3%	\$6.54	0.09	0.10	ESTAR_WC-Miscellaneous-7PLN-v6-1

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College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.11	0%	5%	\$1,183.00	0.02	0.02	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
College	Cooling	Advanced New Construction Designs	sqft	New	0.52	25	\$4.24	10%	30%	\$114.62	3.87	4.15	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	New	2.05	25	\$4.24	10%	30%	\$114.62	3.86	4.14	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	New	0.41	25	\$4.24	10%	30%	\$114.62	3.27	3.51	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	New	0.54	25	\$4.24	10%	30%	\$114.62	2.36	2.53	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.92	25	\$4.24	10%	30%	\$114.62	27.15	30.04	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$114.62	5.77	6.39	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	New	0.08	3	\$0.61	3%	29%	\$320.90	0.22	0.26	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	New	0.32	3	\$0.61	3%	29%	\$320.90	0.22	0.26	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.61	3%	29%	\$320.90	0.18	0.22	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.61	3%	29%	\$320.90	0.13	0.16	COM_SEM-Water Heating-AEG-1
College	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.61	3%	29%	\$320.90	0.38	0.49	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.61	3%	29%	\$320.90	0.11	0.14	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.61	3%	29%	\$320.90	0.02	0.02	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.61	3%	29%	\$320.90	0.10	0.10	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	New	0.11	3	\$0.75	11%	52%	\$334.29	2.62	2.90	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	New	0.44	3	\$0.75	11%	52%	\$334.29	2.62	2.89	COM_CX-HVAC-AEG-1

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College	Ventilation	Commissioning	sqft	New	0.09	3	\$0.75	11%	52%	\$334.29	2.22	2.45	COM_CX-HVAC-AEG-1
College	Water Heating	Commissioning	sqft	New	0.04	3	\$0.75	11%	52%	\$334.29	0.53	0.59	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	New	0.16	3	\$0.75	11%	52%	\$334.29	15.35	17.68	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.75	11%	52%	\$334.29	3.26	3.76	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.75	11%	52%	\$334.29	0.66	0.66	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	New	0.11	3	\$0.24	0%	0%	\$106.10	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	New	0.44	3	\$0.24	0%	0%	\$106.10	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	New	0.09	3	\$0.24	0%	0%	\$106.10	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.24	0%	0%	\$106.10	0.00	0.00	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	New	0.16	3	\$0.24	0%	0%	\$106.10	0.00	0.00	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.24	0%	0%	\$106.10	0.00	0.00	COM_RCX-Lighting-AEG-1
College	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.24	0%	0%	\$106.10	0.00	0.00	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$136.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.04	10	\$1.12	0%	0%	\$4,641.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$8,681.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	New	94.81	16	\$75.53	20%	75%	\$111.36	0.08	0.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,149.99	25	\$1,716.98	0%	75%	\$158.56	0.00	0.00	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$318.49	1.19	1.38	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.30	45	\$0.84	15%	35%	\$318.49	9.47	10.90	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$318.49	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.18	20	\$0.86	15%	35%	\$647.81	12.15	14.01	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$647.81	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$647.81	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.13	20	\$0.81	45%	50%	\$9,999.00	4.50	5.18	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.81	45%	50%	\$9,999.00	-0.89	-1.02	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.89	-1.01	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.12	45	\$1.70	15%	35%	\$611.29	-5.17	-5.96	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.39	45	\$1.70	15%	35%	\$611.29	3.75	4.32	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.06	45	\$1.70	15%	35%	\$611.29	3.76	4.25	Building Energy Simulation Tool

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School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	8.13	18	\$0.59	15%	50%	\$89.64	7.74	8.92	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.19	18	\$0.59	15%	50%	\$89.64	-1.35	-1.55	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.00	18	\$0.59	15%	50%	\$89.64	-1.35	-1.53	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.19	30	\$37.07	48%	48%	\$173.45	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	21.62	30	\$37.07	48%	48%	\$173.45	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.00	30	\$37.07	48%	48%	\$173.45	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,062.41	10	\$914.46	15%	75%	\$32.65	14.69	18.02	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	145.47	15	\$248.07	15%	75%	\$256.05	58.70	72.01	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	335.24	15	\$263.92	15%	75%	\$118.21	13.53	16.59	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	Existing	35.64	5	\$267.96	18%	75%	\$2,077.24	36.73	44.57	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.13	15	\$0.05	5%	15%	\$57.52	9.79	12.01	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.69	14	\$5.25	3%	75%	\$1,169.71	39.96	48.95	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.13	15	\$0.26	15%	20%	\$286.29	6.38	7.22	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	236.44	15	\$189.00	13%	25%	\$117.19	8.26	9.85	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	85.20	15	\$1,273.23	13%	50%	\$2,190.78	9.35	11.16	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.08	15	\$0.06	13%	50%	\$97.13	32.87	39.23	FAN_VSD-Ventilation-MIDATL-v3.0-13
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	24%	49%	\$4,317.82	2.00	2.38	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.68	15	\$0.76	8%	16%	\$116.55	9.38	11.49	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.29	15	\$0.76	8%	16%	\$116.55	24.41	29.13	HVAC_DOAS-Heating-7PLN-v5-1
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,449.58	15	\$7,501.21	15%	15%	\$106.43	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,098.02	15	\$7,501.21	15%	15%	\$106.43	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	3.90	4.74	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	Existing	82.86	15	\$410.87	15%	45%	\$730.10	34.89	39.65	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	44.66	15	\$698.92	15%	75%	\$2,304.24	36.27	40.20	RTU_PREC-Cooling-XCELCO-2017-18-1
School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	67.71	20	\$979.24	15%	25%	\$305.17	0.62	0.74	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	347.89	20	\$979.24	15%	25%	\$305.17	6.57	7.53	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.21	5	\$0.75	30%	40%	\$207.83	14.35	16.54	STAT_WIFI-AII-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.68	5	\$0.75	30%	40%	\$207.83	10.66	12.28	STAT_WIFI-AII-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.11	5	\$0.75	30%	40%	\$207.83	10.68	12.09	STAT_WIFI-AII-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	78.82	10	\$8.63	25%	65%	\$19.84	6.51	8.04	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	86.61	10	\$17.56	25%	65%	(\$208.95)	3.58	4.42	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	17.11	10	\$16.82	25%	65%	(\$344.78)	0.70	0.85	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	613.41	11	\$37.97	15%	20%	\$10.84	4.15	4.75	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	320.45	15	\$15.38	16%	75%	\$7.23	16.10	19.60	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	364.39	4	\$75.87	25%	40%	(\$179.24)	11.14	13.55	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.05	2	\$5.13	15%	75%	\$30.04	8.76	10.65	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.55	20	\$258.33	1%	30%	\$2,769.01	27.87	33.91	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.31	15	\$0.36	3%	23%	\$199.36	64.78	81.72	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.43	15	\$0.60	3%	23%	\$234.96	90.69	114.41	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	215.49	15	\$56.14	1%	3%	\$46.12	1.79	2.73	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	49.29	15	\$65.99	1%	3%	\$237.01	0.04	0.06	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,224.69	11	\$26.48	15%	30%	\$2.56	22.69	37.30	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	227.81	16	\$1,864.95	5%	15%	\$1,472.96	15.49	25.46	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.43	9	\$0.65	15%	25%	\$344.29	22.99	34.98	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	40.23	8	\$56.85	15%	25%	\$344.16	12.22	18.59	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	50.31	7	\$3,486.31	15%	30%	\$9,999.00	22.91	34.87	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	14.01	12	\$50.74	4%	25%	\$603.94	1.39	1.67	RFG_ASH-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.52	4	\$24.51	4%	25%	\$1,626.16	0.39	0.52	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	22.42	15	\$347.21	0%	0%	\$2,409.82	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	18.49	2	\$10.74	4%	25%	\$489.65	0.43	0.84	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.55	15	\$508.61	2%	13%	\$9,999.00	7.60	9.51	RFG_HECOMP-Refrigeration-AEO15-4
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.74	15	\$5,552.98	2%	13%	\$9,999.00	11.12	13.91	RFG_HECOMP-Refrigeration-AEO15-4
School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	70.43	15	\$305.13	4%	25%	\$1,393.09	6.43	8.05	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	282.05	15	\$539.09	2%	13%	\$297.47	9.66	12.09	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	592.59	10	\$449.00	0%	0%	\$141.95	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	32.23	16	\$153.90	4%	25%	\$738.39	1.01	1.30	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	11.59	15	\$135.00	2%	13%	\$1,851.52	0.05	0.06	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	221.38	16	\$105.92	4%	25%	\$84.38	2.09	3.11	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	170.42	10	\$521.11	4%	25%	\$667.36	1.61	2.40	RFG_DDEF-Refrigeration-VTTRM-1
School	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	59.30	8	\$18,135.52	4%	25%	\$9,999.00	0.05	0.10	RFG_ADC-Refrigeration-PGE-R6-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	120.06	12	\$605.15	4%	25%	\$871.84	8.22	10.29	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.26	8	\$15.90	0%	0%	\$525.41	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.64	8	\$3.87	0%	0%	\$1,240.64	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.27	5	\$49.37	0%	0%	\$6,093.71	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,806.22	5	\$288.64	25%	75%	\$44.83	12.67	15.28	VEND_CTRL-Miscellaneous-SCE-17R0-28
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,753.50	18	\$8,815.42	25%	50%	\$684.07	17.13	19.38	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	64.04	15	\$335.00	0%	0%	\$136.56	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	291.94	15	\$335.00	0%	0%	\$136.56	0.00	0.00	AEG - BEST

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School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	14.95	4	\$37.32	10%	50%	\$735.89	15.12	15.66	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$4.83	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,129.92	18	\$4,231.40	0%	0%	\$509.57	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	258.39	10	\$19.59	15%	75%	\$13.54	0.30	0.34	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	58.39	5	\$37,813.23	15%	75%	\$9,999.00	0.01	0.01	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.18	0%	0%	\$7,685.48	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	79.54	7	\$423.28	0%	0%	(\$1,063.49)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	5.71	7	\$423.28	0%	0%	(\$1,063.49)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	5.71	7	\$423.28	0%	0%	(\$1,063.49)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	12,215.13	15	\$1,114.41	0%	0%	\$106.19	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	273.33	15	\$1,114.41	0%	0%	\$106.19	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,256.58	6	\$37.07	1%	3%	\$6.97	3.08	3.39	ESTAR_WC-Miscellaneous-7PLN-v6-1
School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.11	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.24	0%	0%	\$229.59	0.00	0.00	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	Existing	1.06	25	\$4.24	0%	0%	\$229.59	0.00	0.00	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.24	0%	0%	\$229.59	0.00	0.00	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.24	0%	0%	\$229.59	0.00	0.00	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.62	25	\$4.24	0%	0%	\$229.59	0.00	0.00	ADVNC-AII-RSRCH-1
School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.18	25	\$4.24	0%	0%	\$229.59	0.00	0.00	ADVNC-AII-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.26	2%	22%	\$229.20	8.49	10.41	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.26	2%	22%	\$229.20	6.30	7.72	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.26	2%	22%	\$229.20	6.32	7.54	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.26	2%	22%	\$229.20	4.17	5.07	COM_SEM-Water Heating-AEG-1

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School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.26	2%	22%	\$229.20	16.21	23.91	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.26	2%	22%	\$229.20	4.53	6.90	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.26	2%	22%	\$229.20	3.24	3.66	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.26	2%	22%	\$229.20	4.95	5.13	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	Existing	0.08	3	\$0.31	0%	0%	\$222.87	0.00	0.00	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	Existing	0.26	3	\$0.31	0%	0%	\$222.87	0.00	0.00	COM_CX-HVAC-AEG-1
School	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.31	0%	0%	\$222.87	0.00	0.00	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.31	0%	0%	\$222.87	0.00	0.00	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.31	0%	0%	\$222.87	0.00	0.00	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	Existing	0.03	3	\$0.31	0%	0%	\$222.87	0.00	0.00	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	Existing	0.03	3	\$0.31	0%	0%	\$222.87	0.00	0.00	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	Existing	0.08	3	\$0.10	13%	56%	\$70.74	25.26	30.99	COM_RCX-HVAC-AEG-1
School	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.10	13%	56%	\$70.74	18.76	22.99	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.10	13%	56%	\$70.74	18.81	22.44	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.10	13%	56%	\$70.74	4.13	5.03	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.10	13%	56%	\$70.74	40.22	59.32	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.03	3	\$0.10	13%	56%	\$70.74	11.25	17.12	COM_RCX-Lighting-AEG-1

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School	Refrigeration	Retrocommissioning	sqft	Existing	0.03	3	\$0.10	13%	56%	\$70.74	16.06	18.18	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$219.59	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.10	10	\$1.12	0%	0%	\$1,892.81	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.03	3	\$0.24	0%	0%	\$3,540.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.05	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	Existing	86.34	16	\$75.53	20%	75%	\$122.29	2.57	3.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,840.29	25	\$2,735.68	0%	0%	\$168.12	0.00	0.00	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,757.26	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.05	45	\$0.84	15%	50%	\$1,757.26	0.84	0.90	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,757.26	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.11	20	\$0.86	15%	50%	\$1,012.92	3.69	3.98	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$1,012.92	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$1,012.92	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.81	45%	50%	\$9,999.00	0.35	0.37	Building Energy Simulation Tool

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School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.05	-0.06	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.81	45%	50%	\$9,999.00	-0.06	-0.06	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$6,225.49	-0.16	-0.18	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$1.70	15%	50%	\$6,225.49	0.16	0.17	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$6,225.49	0.17	0.19	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	5.10	18	\$0.59	15%	35%	\$9,999.00	0.76	0.82	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-6.34	18	\$0.59	15%	35%	\$9,999.00	-0.21	-0.23	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.15	18	\$0.59	15%	35%	\$9,999.00	-0.24	-0.25	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.07	30	\$37.07	66%	66%	\$194.52	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	New	19.04	30	\$37.07	66%	66%	\$194.52	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.99	30	\$37.07	66%	66%	\$194.52	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,896.34	10	\$914.46	15%	75%	\$54.61	1.12	1.30	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	83.23	15	\$248.07	15%	75%	\$428.29	5.55	6.37	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	191.80	15	\$263.92	15%	75%	\$197.72	1.28	1.47	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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School	Cooling	HVAC - Economizer	HP cool	New	22.51	5	\$267.96	18%	75%	\$3,196.30	1.79	2.12	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.09	15	\$0.05	10%	15%	\$85.19	0.52	0.60	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.61	14	\$5.25	6%	75%	\$1,282.57	5.37	6.19	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.13	15	\$0.26	15%	20%	\$283.58	1.53	1.66	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	233.93	15	\$189.00	19%	25%	\$116.03	0.62	0.71	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	84.30	15	\$1,273.23	19%	50%	\$2,169.13	1.22	1.40	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.08	15	\$0.06	19%	50%	\$96.17	4.30	4.93	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	24%	49%	\$4,277.03	0.31	0.36	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.60	15	\$0.76	8%	16%	\$124.67	1.34	1.54	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.28	15	\$0.76	8%	16%	\$124.67	3.84	4.40	HVAC_DOAS-Heating-7PLN-v5-1
School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	943.11	15	\$7,501.21	3%	15%	\$121.01	1.14	1.31	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,015.00	15	\$7,501.21	3%	15%	\$121.01	2.22	2.55	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	New	5.79	3	\$33.20	0%	45%	\$2,290.64	0.16	0.20	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	New	56.72	15	\$410.87	3%	45%	\$1,050.16	8.39	9.28	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	New	30.57	15	\$698.92	3%	75%	\$3,314.36	9.00	9.74	RTU_PREC-Cooling-XCELCO-2017-18-1

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School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	53.63	20	\$979.24	8%	25%	\$327.26	0.17	0.19	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	330.49	20	\$979.24	8%	25%	\$327.26	2.00	2.27	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	1%	40%	\$237.85	3.11	3.54	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.60	5	\$0.75	1%	40%	\$237.85	3.12	3.55	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.11	5	\$0.75	1%	40%	\$237.85	3.42	3.89	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	76.13	10	\$8.63	3%	65%	\$19.61	1.12	1.31	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	83.65	10	\$17.56	3%	65%	(\$206.50)	0.61	0.72	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	16.53	10	\$16.82	3%	65%	(\$340.75)	0.14	0.16	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	7%	20%	\$10.71	2.16	2.36	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	309.52	15	\$15.38	1%	75%	\$7.14	3.20	3.66	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	351.95	4	\$75.87	25%	40%	(\$177.15)	0.70	0.83	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.29	0.35	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.12	20	\$258.33	1%	30%	\$2,736.65	4.54	5.19	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.30	15	\$0.36	11%	23%	\$177.45	23.21	26.34	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.42	15	\$0.60	11%	23%	\$209.14	32.49	36.88	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	207.92	15	\$56.14	1%	3%	\$42.14	0.28	0.35	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.15	15	\$65.99	1%	3%	\$197.52	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,228.08	11	\$26.48	15%	30%	\$2.07	4.23	5.50	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	228.15	16	\$1,864.95	5%	15%	\$1,189.24	3.46	4.41	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.42	9	\$0.65	15%	25%	\$290.16	3.54	4.44	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	39.74	8	\$56.85	15%	25%	\$290.05	1.73	2.18	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	49.69	7	\$3,486.31	15%	30%	\$9,999.00	2.94	3.73	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	13.19	12	\$50.74	4%	25%	\$614.11	0.19	0.22	RFG_ASH-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.88	4	\$24.51	4%	25%	\$1,731.25	0.02	0.03	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	20.81	15	\$347.21	0%	0%	\$2,469.84	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	14.60	2	\$10.74	4%	25%	\$586.81	0.01	0.02	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.51	15	\$508.61	2%	13%	\$9,999.00	1.16	1.36	RFG_HECOMP-Refrigeration-AEO17-3
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	9.04	15	\$5,552.98	2%	13%	\$9,999.00	1.70	1.99	RFG_HECOMP-Refrigeration-AEO17-5

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School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	65.36	15	\$305.13	4%	25%	\$1,427.79	0.98	1.15	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	261.75	15	\$539.09	2%	13%	\$304.88	1.48	1.73	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	549.94	10	\$449.00	0%	0%	\$145.49	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	29.51	16	\$153.90	4%	25%	\$766.57	0.16	0.19	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	10.61	15	\$135.00	2%	13%	\$1,922.16	0.01	0.01	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	189.66	16	\$105.92	4%	25%	\$92.47	0.34	0.42	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	146.01	10	\$521.11	4%	25%	\$731.34	0.20	0.26	RFG_DDEF-Refrigeration-VTRM-1
School	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.67	8	\$647.70	4%	25%	\$9,999.00	0.01	0.01	RFG_ASH-Refrigeration-NMTRM-2016-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	111.42	12	\$5,648.09	4%	25%	\$8,339.84	1.13	1.33	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.87	8	\$15.90	0%	0%	\$534.90	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.60	8	\$3.87	0%	0%	\$1,263.06	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.13	5	\$49.37	0%	0%	\$6,205.09	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,686.40	5	\$288.64	25%	75%	\$45.73	0.90	1.07	VEND_CTRL-Miscellaneous-SCE-17R0-41
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,734.13	18	\$8,815.42	25%	50%	\$677.61	4.47	4.84	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	50.72	15	\$335.00	0%	0%	\$146.53	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	277.80	15	\$335.00	0%	0%	\$146.53	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	14.56	4	\$37.32	10%	50%	\$756.22	0.88	0.94	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.18	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.18	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.18	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$2.18	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,117.43	18	\$4,231.40	0%	0%	\$504.76	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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School	Miscellaneous	Pool Pump - Timer	perBldg	New	248.71	10	\$19.59	15%	75%	\$13.62	0.05	0.06	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	New	57.59	5	\$37,813.23	15%	75%	\$9,999.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.16	0%	0%	\$7,058.69	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	76.82	7	\$423.28	0%	0%	(\$1,053.80)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	5.46	7	\$423.28	0%	0%	(\$1,053.80)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	5.46	7	\$423.28	0%	0%	(\$1,053.80)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	11,798.39	15	\$1,114.41	0%	0%	\$105.05	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	252.94	15	\$1,114.41	0%	0%	\$105.05	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,256.58	6	\$37.07	1%	3%	\$6.97	0.40	0.43	ESTAR_WC-Miscellaneous-7PLN-v6-1
School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.10	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	New	0.24	25	\$4.24	10%	25%	\$210.48	4.88	5.24	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	New	1.06	25	\$4.24	10%	25%	\$210.48	4.90	5.25	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	New	0.19	25	\$4.24	10%	25%	\$210.48	5.38	5.76	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	25%	\$210.48	3.57	3.83	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.66	25	\$4.24	10%	25%	\$210.48	64.19	71.35	ADVNC-AII-RSRCH-1

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School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.19	25	\$4.24	10%	25%	\$210.48	15.00	16.72	ADVNC-All-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	New	0.04	3	\$0.20	2%	22%	\$185.72	0.28	0.33	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	New	0.16	3	\$0.20	2%	22%	\$185.72	0.28	0.33	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.20	2%	22%	\$185.72	0.30	0.36	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.20	2%	22%	\$185.72	0.20	0.24	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.20	2%	22%	\$185.72	0.91	1.20	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.20	2%	22%	\$185.72	0.28	0.37	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.20	2%	22%	\$185.72	0.15	0.17	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.20	2%	22%	\$185.72	0.22	0.24	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	New	0.05	3	\$0.23	13%	56%	\$178.57	4.61	5.10	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	New	0.23	3	\$0.23	13%	56%	\$178.57	4.63	5.11	COM_CX-HVAC-AEG-1
School	Ventilation	Commissioning	sqft	New	0.04	3	\$0.23	13%	56%	\$178.57	5.08	5.60	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	New	0.02	3	\$0.23	13%	56%	\$178.57	1.13	1.24	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.23	13%	56%	\$178.57	50.52	58.78	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.23	13%	56%	\$178.57	11.81	13.71	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.23	13%	56%	\$178.57	14.77	15.67	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	New	0.05	3	\$0.07	0%	0%	\$56.68	0.00	0.00	COM_RCX-HVAC-AEG-1

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School	Heating	Retrocommissioning	sqft	New	0.23	3	\$0.07	0%	0%	\$56.68	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.07	0%	0%	\$56.68	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.07	0%	0%	\$56.68	0.00	0.00	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.07	0%	0%	\$56.68	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.07	0%	0%	\$56.68	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.07	0%	0%	\$56.68	0.00	0.00	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.08	10	\$0.09	0%	0%	\$200.64	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.10	10	\$1.12	0%	0%	\$1,979.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.02	3	\$0.24	0%	0%	\$3,702.82	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.05	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	New	86.34	16	\$75.53	20%	75%	\$122.29	0.35	0.40	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,813.28	25	\$2,758.09	0%	0%	\$173.71	0.00	0.00	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$467.78	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.20	45	\$0.84	15%	35%	\$467.78	38.19	42.66	Building Energy Simulation Tool

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Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$467.78	1.50	1.69	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.15	20	\$0.81	45%	50%	\$9,999.00	7.52	8.69	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.13	20	\$0.81	45%	50%	\$9,999.00	-6.36	-7.11	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.81	45%	50%	\$9,999.00	-2.84	-3.20	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$1.70	15%	35%	\$1,575.10	-0.25	-0.29	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.09	45	\$1.70	15%	35%	\$1,575.10	6.96	7.78	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.03	45	\$1.70	15%	35%	\$1,575.10	3.11	3.50	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	1.78	30	\$37.07	48%	48%	\$460.06	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	6.73	30	\$37.07	48%	48%	\$460.06	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.34	30	\$37.07	48%	48%	\$460.06	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,108.88	10	\$914.46	15%	75%	\$51.36	3.47	4.08	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	66.01	15	\$248.07	15%	75%	\$545.05	10.23	12.05	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	162.30	15	\$263.92	15%	75%	\$235.86	2.52	2.96	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	23.37	15	\$248.07	15%	75%	\$1,524.96	2.89	3.36	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	5,552.63	10	\$1,796.53	15%	75%	\$156.30	4.93	5.75	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	44.26	5	\$267.96	18%	75%	\$1,653.21	17.20	20.58	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.15	15	\$0.05	5%	15%	\$52.18	16.17	19.96	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.01	14	\$5.25	3%	75%	\$775.04	150.33	176.20	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	15	\$0.26	15%	20%	\$213.67	10.84	12.19	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	2,124.03	15	\$189.00	13%	25%	\$12.97	13.85	16.41	VENT_PMSM-Ventilation-AEG-2016-2
Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	765.40	15	\$1,273.23	13%	50%	\$242.53	15.69	18.59	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.11	15	\$0.01	13%	50%	\$10.75	55.13	65.34	FAN_VSD-Ventilation-MIDATL-v3.0-13
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	3%	21%	\$3,222.57	2.51	2.97	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.42	15	\$0.76	1%	7%	\$137.00	26.44	30.99	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.38	15	\$0.76	1%	7%	\$137.00	30.68	36.36	HVAC_DOAS-Heating-7PLN-v5-1

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Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,608.99	15	\$7,501.21	15%	30%	\$150.89	22.90	28.27	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	5,636.61	15	\$7,501.21	15%	30%	\$150.89	75.07	87.99	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.95	1.46	1.77	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	Existing	157.41	15	\$410.87	15%	45%	\$384.32	25.11	28.52	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	84.84	15	\$698.92	15%	75%	\$1,212.95	26.25	29.07	RTU_PREC-Cooling-XCELCO-2017-18-1
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	128.67	20	\$1,419.90	15%	75%	\$524.09	100.10	120.83	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	226.10	20	\$1,419.90	15%	75%	\$524.09	254.72	292.07	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.23	5	\$0.75	30%	40%	\$254.61	24.00	27.74	STAT_WIFI-AII-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.42	5	\$0.75	30%	40%	\$254.61	40.61	45.38	STAT_WIFI-AII-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.15	5	\$0.75	30%	40%	\$254.61	18.15	20.42	STAT_WIFI-AII-7PLN-v2-1
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	425.82	10	\$8.63	25%	65%	\$3.66	26.37	32.45	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	467.90	10	\$17.56	25%	65%	(\$38.58)	14.49	17.83	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	92.46	10	\$16.82	25%	65%	(\$63.65)	2.83	3.43	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	614.46	11	\$37.97	15%	20%	\$10.79	17.06	19.46	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,731.39	15	\$15.38	16%	75%	\$1.33	65.35	79.30	AEG-BEST

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Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,968.58	4	\$75.87	25%	40%	(\$33.09)	45.18	54.83	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.22	2	\$5.13	15%	75%	\$29.92	35.52	43.11	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.57	20	\$258.33	1%	30%	\$2,756.59	113.10	137.25	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.24	15	\$0.36	3%	23%	\$243.76	67.64	84.58	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.33	15	\$0.60	3%	23%	\$287.29	94.69	118.41	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	414.26	15	\$56.14	1%	3%	\$23.47	2.66	3.95	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	50.91	15	\$65.99	1%	3%	\$224.52	0.07	0.10	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	669.73	11	\$26.48	15%	30%	\$8.52	8.50	13.96	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	68.58	16	\$1,864.95	5%	15%	\$4,902.54	5.80	9.53	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	6.19	9	\$0.65	15%	25%	\$20.14	95.21	116.77	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	199.39	8	\$56.85	15%	25%	\$58.98	50.61	62.06	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	249.31	7	\$3,486.31	15%	30%	\$3,152.38	94.92	116.41	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	54.95	12	\$50.74	0%	0%	\$154.02	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1

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Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	13.82	4	\$24.51	0%	0%	\$591.92	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	73.58	15	\$347.21	0%	0%	\$722.92	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	68.68	2	\$10.74	0%	0%	\$133.86	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	1.82	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	31.96	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	231.12	15	\$305.13	0%	0%	\$417.91	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	925.56	15	\$539.09	0%	0%	\$89.24	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	1,944.62	10	\$449.00	0%	0%	\$42.58	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	123.76	16	\$153.90	0%	0%	\$186.24	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	44.51	15	\$135.00	0%	0%	\$466.99	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	471.79	16	\$105.92	0%	0%	\$35.66	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	363.19	10	\$521.11	0%	0%	\$282.00	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	220.27	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1

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Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	393.98	12	\$605.15	0%	0%	\$261.54	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	24.53	8	\$15.90	0%	0%	\$134.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.53	8	\$3.87	0%	0%	\$316.40	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	8.89	5	\$49.37	0%	0%	\$1,554.10	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,796.70	5	\$288.64	25%	75%	\$45.07	33.36	40.19	VEND_CTRL-Miscellaneous-SCE-17R0-35
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,336.49	18	\$8,815.42	25%	50%	\$510.55	29.10	32.75	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	84.81	15	\$335.00	15%	75%	\$214.71	63.94	77.18	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	143.98	15	\$335.00	15%	75%	\$214.71	147.63	169.28	AEG - BEST
Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.76	4	\$37.32	10%	50%	\$1,866.14	7.58	7.61	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.83	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.83	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.83	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$7.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,509.31	18	\$4,231.40	0%	0%	\$228.19	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	273.80	10	\$19.59	15%	75%	\$12.77	3.05	3.42	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	123.74	5	\$63,022.06	15%	75%	\$9,999.00	0.54	0.63	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	perBldg	Existing	712.26	10	\$28,402.65	0%	0%	\$7,616.18	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	429.69	7	\$423.28	0%	0%	(\$196.89)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	30.26	7	\$423.28	0%	0%	(\$196.89)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	30.26	7	\$423.28	0%	0%	(\$196.89)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	65,991.96	15	\$1,114.41	0%	0%	\$19.62	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,448.20	15	\$1,114.41	0%	0%	\$19.62	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,045.05	6	\$37.07	1%	3%	\$2.17	7.55	8.29	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.21	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.34	25	\$4.24	0%	0%	\$176.12	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.24	0%	0%	\$176.12	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$176.12	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.81	25	\$4.24	0%	0%	\$176.12	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.73	25	\$4.24	0%	0%	\$176.12	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.43	25	\$4.24	0%	0%	\$176.12	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.36	0%	0%	\$261.49	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$0.36	0%	0%	\$261.49	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.36	0%	0%	\$261.49	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.13	3	\$0.36	0%	0%	\$261.49	0.00	0.00	COM_SEM-Water Heating-AEG-1
Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.36	0%	0%	\$261.49	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.36	0%	0%	\$261.49	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.36	0%	0%	\$261.49	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.36	0%	0%	\$261.49	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	Existing	0.09	3	\$0.34	0%	0%	\$218.93	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	Existing	0.16	3	\$0.34	0%	0%	\$218.93	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	Existing	0.06	3	\$0.34	0%	0%	\$218.93	0.00	0.00	COM_CX-HVAC-AEG-1

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Lodging	Water Heating	Commissioning	sqft	Existing	0.06	3	\$0.34	0%	0%	\$218.93	0.00	0.00	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.14	3	\$0.34	0%	0%	\$218.93	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.34	0%	0%	\$218.93	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.34	0%	0%	\$218.93	0.00	0.00	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.09	3	\$0.11	25%	90%	\$69.49	63.05	77.83	COM_RCX-HVAC-AEG-1
Lodging	Heating	Retrocommissioning	sqft	Existing	0.16	3	\$0.11	25%	90%	\$69.49	106.70	125.07	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.06	3	\$0.11	25%	90%	\$69.49	47.68	56.51	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.06	3	\$0.11	25%	90%	\$69.49	25.35	30.76	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.11	25%	90%	\$69.49	90.68	130.32	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.11	25%	90%	\$69.49	70.44	86.39	COM_RCX-Lighting-AEG-1
Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$0.11	25%	90%	\$69.49	51.53	56.34	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$186.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.17	10	\$1.12	0%	0%	\$1,135.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.24	0%	0%	\$2,122.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.08	10	\$3.24	0%	0%	\$6,730.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$7,303.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	Existing	78.67	16	\$75.53	20%	75%	\$134.20	1.75	2.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	3,201.47	25	\$4,606.58	0%	75%	\$147.64	0.00	0.00	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$2,156.20	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.04	45	\$0.84	15%	50%	\$2,156.20	3.23	3.48	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$2,156.20	0.12	0.12	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.81	45%	50%	\$9,999.00	0.53	0.57	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.81	45%	50%	\$9,999.00	-0.54	-0.58	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.24	-0.26	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$9,999.00	0.23	0.25	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.10	0.11	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool

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Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.48	30	\$37.07	66%	66%	\$502.64	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	6.20	30	\$37.07	66%	66%	\$502.64	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.22	30	\$37.07	66%	66%	\$502.64	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,646.88	10	\$914.46	15%	75%	\$59.76	0.31	0.36	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	56.20	15	\$248.07	15%	75%	\$634.23	1.15	1.31	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	138.18	15	\$263.92	15%	75%	\$274.45	0.28	0.32	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	21.99	15	\$248.07	15%	75%	\$1,621.15	0.35	0.40	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	4,718.99	10	\$1,796.53	15%	75%	\$183.91	0.44	0.51	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	New	41.42	5	\$267.96	18%	75%	\$1,740.91	1.02	1.22	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.12	15	\$0.05	10%	15%	\$59.71	0.95	1.09	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.93	14	\$5.25	6%	75%	\$838.50	16.85	19.36	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.16	15	\$0.26	15%	20%	\$231.39	1.99	2.16	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	2,129.90	15	\$189.00	19%	25%	\$12.74	0.80	0.91	VENT_PMSM-Ventilation-AEG-2016-2

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Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	767.52	15	\$1,273.23	19%	50%	\$238.23	1.58	1.81	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.10	15	\$0.01	19%	50%	\$10.56	5.55	6.36	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	3%	21%	\$3,489.93	0.30	0.35	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.39	15	\$0.76	1%	7%	\$149.06	3.15	3.61	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.35	15	\$0.76	1%	7%	\$149.06	3.71	4.25	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,342.16	15	\$7,501.21	3%	30%	\$165.18	4.76	5.46	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,192.77	15	\$7,501.21	3%	30%	\$165.18	15.98	18.33	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	New	8.05	3	\$33.20	0%	45%	\$1,647.01	0.07	0.09	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	New	149.85	15	\$410.87	3%	45%	\$397.37	7.04	7.79	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	80.77	15	\$698.92	3%	75%	\$1,254.11	7.57	8.19	RTU_PREC-Cooling-XCELCO-2017-18-1
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	101.91	20	\$1,419.90	8%	75%	\$585.61	15.57	17.61	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	209.35	20	\$1,419.90	8%	75%	\$585.61	42.17	47.71	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.20	5	\$0.75	1%	40%	\$279.88	5.69	6.47	STAT_WIFI-AII-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.39	5	\$0.75	1%	40%	\$279.88	9.87	11.22	STAT_WIFI-AII-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.13	5	\$0.75	1%	40%	\$279.88	4.43	5.03	STAT_WIFI-AII-7PLN-v2-1

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Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	410.59	10	\$8.63	3%	65%	\$3.64	3.80	4.44	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	451.16	10	\$17.56	3%	65%	(\$38.29)	2.09	2.44	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	89.15	10	\$16.82	3%	65%	(\$63.18)	0.47	0.55	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	7%	20%	\$10.71	7.43	8.13	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,669.48	15	\$15.38	1%	75%	\$1.32	10.90	12.49	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	1,898.19	4	\$75.87	25%	40%	(\$32.85)	2.39	2.84	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	1.00	1.20	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.12	20	\$258.33	1%	30%	\$2,736.09	15.48	17.70	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.22	15	\$0.36	11%	23%	\$242.50	17.33	20.46	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.31	15	\$0.60	11%	23%	\$285.80	24.26	28.65	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	387.23	15	\$56.14	1%	3%	\$23.76	0.30	0.40	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	51.19	15	\$65.99	1%	3%	\$211.25	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	671.42	11	\$26.48	15%	30%	\$6.86	1.34	1.74	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	68.75	16	\$1,864.95	5%	15%	\$3,945.25	1.10	1.40	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	5.71	9	\$0.65	15%	25%	\$20.93	9.18	10.74	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	183.79	8	\$56.85	15%	25%	\$61.30	4.48	5.26	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	229.81	7	\$3,486.31	15%	30%	\$3,276.21	7.64	9.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	51.73	12	\$50.74	0%	0%	\$156.62	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	12.66	4	\$24.51	0%	0%	\$613.96	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	68.91	15	\$347.21	0%	0%	\$736.47	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	54.98	2	\$10.74	0%	0%	\$155.44	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	1.71	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	29.93	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	216.43	15	\$305.13	0%	0%	\$425.75	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	866.76	15	\$539.09	0%	0%	\$90.91	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	1,821.07	10	\$449.00	0%	0%	\$43.38	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	115.45	16	\$153.90	0%	0%	\$190.67	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	41.52	15	\$135.00	0%	0%	\$478.12	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	413.30	16	\$105.92	0%	0%	\$38.27	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	318.16	10	\$521.11	0%	0%	\$302.66	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	6.30	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	368.95	12	\$5,648.09	0%	0%	\$2,486.83	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	23.02	8	\$15.90	0%	0%	\$136.42	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.37	8	\$3.87	0%	0%	\$322.12	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	8.34	5	\$49.37	0%	0%	\$1,582.50	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,677.51	5	\$288.64	25%	75%	\$45.98	2.00	2.36	VEND_CTRL-Miscellaneous-SCE-17R0-41
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,125.12	18	\$8,815.42	25%	50%	\$552.91	5.82	6.29	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	67.17	15	\$335.00	15%	75%	\$239.05	8.88	10.05	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	134.19	15	\$335.00	15%	75%	\$239.05	21.96	24.86	AEG - BEST

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Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	5.60	4	\$37.32	10%	50%	\$1,940.66	0.37	0.38	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$5.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,282.30	18	\$4,231.40	0%	0%	\$247.12	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	263.55	10	\$19.59	15%	75%	\$12.86	0.46	0.51	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	New	122.05	5	\$63,022.06	15%	75%	\$9,999.00	0.03	0.04	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.53	0%	0%	\$7,026.18	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	414.32	7	\$423.28	0%	0%	(\$195.82)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	28.94	7	\$423.28	0%	0%	(\$195.82)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	28.94	7	\$423.28	0%	0%	(\$195.82)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	63,632.02	15	\$1,114.41	0%	0%	\$19.48	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,340.19	15	\$1,114.41	0%	0%	\$19.48	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,045.05	6	\$37.07	1%	3%	\$2.17	0.82	0.89	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.18	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.34	25	\$4.24	10%	25%	\$168.00	9.11	9.76	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.69	25	\$4.24	10%	25%	\$168.00	15.81	16.93	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$168.00	7.10	7.60	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.83	25	\$4.24	10%	25%	\$168.00	12.53	13.41	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.74	25	\$4.24	10%	25%	\$168.00	71.60	81.03	ADVNC-AII-RSRCH-1
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.44	25	\$4.24	10%	25%	\$168.00	40.10	43.01	ADVNC-AII-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	New	0.05	3	\$0.30	0%	0%	\$227.93	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	New	0.11	3	\$0.30	0%	0%	\$227.93	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.30	0%	0%	\$227.93	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.13	3	\$0.30	0%	0%	\$227.93	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.30	0%	0%	\$227.93	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.30	0%	0%	\$227.93	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.30	0%	0%	\$227.93	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.30	0%	0%	\$227.93	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	New	0.07	3	\$0.28	25%	90%	\$190.33	12.91	14.24	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	New	0.15	3	\$0.28	25%	90%	\$190.33	22.40	24.69	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	New	0.05	3	\$0.28	25%	90%	\$190.33	10.06	11.08	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	New	0.06	3	\$0.28	25%	90%	\$190.33	5.92	6.52	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	New	0.13	3	\$0.28	25%	90%	\$190.33	84.56	101.31	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$0.28	25%	90%	\$190.33	47.37	52.32	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	New	0.05	3	\$0.28	25%	90%	\$190.33	34.16	35.84	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	New	0.07	3	\$0.09	0%	0%	\$60.41	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Heating	Retrocommissioning	sqft	New	0.15	3	\$0.09	0%	0%	\$60.41	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.09	0%	0%	\$60.41	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	New	0.06	3	\$0.09	0%	0%	\$60.41	0.00	0.00	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.13	3	\$0.09	0%	0%	\$60.41	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.09	0%	0%	\$60.41	0.00	0.00	COM_RCX-Lighting-AEG-1

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Lodging	Refrigeration	Retrocommissioning	sqft	New	0.05	3	\$0.09	0%	0%	\$60.41	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.09	10	\$0.09	0%	0%	\$188.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.16	10	\$1.12	0%	0%	\$1,185.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.04	3	\$0.24	0%	0%	\$2,216.74	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.08	10	\$3.24	0%	0%	\$7,028.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$7,626.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	New	78.67	16	\$75.53	20%	75%	\$134.20	0.20	0.23	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	3,116.25	25	\$4,640.73	0%	75%	\$156.39	0.00	0.00	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.13	45	\$0.84	15%	35%	\$138.79	6.75	7.71	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.55	45	\$0.84	15%	35%	\$138.79	26.09	29.10	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$138.79	5.29	5.96	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.05	20	\$0.86	15%	35%	\$1,521.08	2.63	3.01	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	35%	\$1,521.08	1.10	1.23	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$1,521.08	0.22	0.25	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.17	20	\$0.81	45%	50%	\$9,999.00	2.25	2.57	Building Energy Simulation Tool

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Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.36	20	\$0.81	45%	50%	\$9,999.00	-4.35	-4.85	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.81	45%	50%	\$9,999.00	-0.88	-0.99	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$1.70	15%	35%	\$48.68	0.10	0.12	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.83	45	\$1.70	15%	35%	\$48.68	34.78	38.80	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.13	45	\$1.70	15%	35%	\$48.68	7.05	7.95	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	8.19	18	\$0.59	15%	25%	\$2.28	0.42	0.48	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	25.60	18	\$0.59	15%	25%	\$2.28	1.23	1.37	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.89	18	\$0.59	15%	25%	\$2.28	0.25	0.28	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.43	30	\$37.07	48%	48%	\$131.85	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	30.07	30	\$37.07	48%	48%	\$131.85	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.60	30	\$37.07	48%	48%	\$131.85	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	88.66	5	\$267.96	18%	75%	\$827.51	18.16	21.82	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.17	15	\$0.05	5%	15%	\$43.38	4.88	5.91	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	9.21	14	\$5.25	3%	75%	\$84.78	103.57	121.02	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.05	15	\$0.26	15%	20%	\$780.88	3.36	3.79	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	370.45	15	\$189.00	13%	25%	\$74.53	4.33	5.14	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	133.49	15	\$1,273.23	13%	50%	\$1,393.23	4.90	5.82	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$0.01	13%	50%	\$61.77	17.22	20.47	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	9%	25%	\$9,999.00	0.68	0.81	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.16	15	\$0.76	3%	8%	\$86.69	15.91	18.59	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.10	15	\$0.76	3%	8%	\$86.69	8.37	9.95	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,902.11	15	\$7,501.21	15%	75%	\$62.54	27.64	33.48	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,426.16	15	\$7,501.21	15%	75%	\$62.54	206.89	241.74	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	1.23	1.49	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	Existing	241.83	15	\$410.87	15%	45%	\$250.16	32.22	36.61	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	130.34	15	\$698.92	15%	75%	\$789.51	33.56	37.18	RTU_PREC-Cooling-XCELCO-2017-18-1

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Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	197.62	20	\$1,958.49	15%	25%	\$250.80	0.57	0.69	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	815.56	20	\$1,958.49	15%	25%	\$250.80	30.74	35.25	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	30%	40%	\$137.20	7.18	8.20	STAT_WIFI-All-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.16	5	\$0.75	30%	40%	\$137.20	27.75	30.95	STAT_WIFI-All-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	30%	40%	\$137.20	5.62	6.34	STAT_WIFI-All-7PLN-v2-1
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	68.81	10	\$8.63	25%	65%	\$23.33	2.58	3.28	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	75.61	10	\$17.56	25%	65%	(\$245.67)	1.42	1.80	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	14.94	10	\$16.82	25%	65%	(\$405.38)	0.28	0.35	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	604.61	11	\$37.97	15%	20%	\$11.28	1.65	1.92	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	279.71	15	\$15.38	16%	75%	\$8.50	6.39	7.97	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	318.10	4	\$75.87	25%	40%	(\$210.74)	4.42	5.51	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	97.63	2	\$5.13	15%	75%	\$31.29	3.47	4.33	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.37	20	\$258.33	1%	30%	\$2,882.91	11.06	13.79	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.27	15	\$0.36	3%	23%	\$203.80	98.69	114.84	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.38	15	\$0.60	3%	23%	\$240.20	138.17	160.78	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	581.64	15	\$56.14	1%	3%	\$15.13	2.54	3.32	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	51.10	15	\$65.99	1%	3%	\$202.39	0.14	0.19	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	416.81	11	\$26.48	15%	30%	\$13.44	6.25	10.05	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	42.68	16	\$1,864.95	5%	15%	\$7,731.44	4.27	6.86	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.18	9	\$0.65	15%	25%	\$109.11	26.84	34.38	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	100.26	8	\$56.85	15%	25%	\$121.08	14.26	18.27	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	125.36	7	\$3,486.31	15%	30%	\$6,471.03	26.75	34.27	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	137.65	12	\$50.74	0%	0%	\$61.42	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	42.42	4	\$24.51	0%	0%	\$199.44	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	173.94	15	\$347.21	0%	0%	\$319.71	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	163.85	2	\$10.74	0%	0%	\$55.39	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	4.30	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	75.55	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4

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Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	546.32	15	\$305.13	0%	0%	\$184.82	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	2,187.88	15	\$539.09	0%	0%	\$39.47	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,596.78	10	\$449.00	0%	0%	\$18.83	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	311.11	16	\$153.90	0%	0%	\$77.43	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	111.88	15	\$135.00	0%	0%	\$194.15	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,683.04	16	\$105.92	0%	0%	\$11.58	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,295.62	10	\$521.11	0%	0%	\$91.56	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	525.48	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	931.30	12	\$605.15	0%	0%	\$115.67	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	61.44	8	\$15.90	0%	0%	\$53.44	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	6.33	8	\$3.87	0%	0%	\$126.19	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	22.26	5	\$49.37	0%	0%	\$619.82	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,630.65	5	\$288.64	25%	75%	\$49.53	4.82	5.76	VEND_CTRL-Miscellaneous-SCE-17R0-49
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	640.55	18	\$8,815.42	25%	50%	\$1,865.89	9.02	10.17	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	94.62	15	\$335.00	0%	0%	\$101.66	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	384.00	15	\$335.00	0%	0%	\$101.66	0.00	0.00	AEG - BEST
Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	7.85	4	\$37.32	10%	50%	\$1,329.87	12.47	12.04	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.54	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.54	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.54	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$5.51	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,375.85	18	\$4,231.40	0%	0%	\$416.97	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.73	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	69.43	7	\$423.28	0%	0%	(\$1,431.93)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$1,431.93)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$1,431.93)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	10,663.45	15	\$1,114.41	0%	0%	\$127.65	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$127.65	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,532.06	6	\$37.07	1%	3%	\$1.58	5.84	6.42	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.19	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.31	25	\$4.24	0%	0%	\$248.38	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	1.18	25	\$4.24	0%	0%	\$248.38	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.05	25	\$4.24	0%	0%	\$248.38	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.07	25	\$4.24	0%	0%	\$248.38	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.24	0%	0%	\$248.38	0.00	0.00	ADVNC-AII-RSRCH-1

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Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.11	25	\$4.24	0%	0%	\$248.38	0.00	0.00	ADVNC-All-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.08	3	\$0.30	3%	11%	\$225.92	1.69	2.05	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.32	3	\$0.30	3%	11%	\$225.92	6.53	7.64	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.30	3%	11%	\$225.92	1.32	1.57	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.30	3%	11%	\$225.92	0.66	0.82	COM_SEM-Water Heating-AEG-1
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.30	3%	11%	\$225.92	9.22	11.84	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.30	3%	11%	\$225.92	2.12	2.71	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.30	3%	11%	\$225.92	1.07	0.88	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.30	3%	11%	\$225.92	1.63	1.58	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	Existing	0.10	3	\$0.44	0%	0%	\$255.40	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	Existing	0.44	3	\$0.44	0%	0%	\$255.40	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	Existing	0.02	3	\$0.44	0%	0%	\$255.40	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.44	0%	0%	\$255.40	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.44	0%	0%	\$255.40	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.44	0%	0%	\$255.40	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.44	0%	0%	\$255.40	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.10	3	\$0.14	9%	71%	\$81.06	18.14	21.98	COM_RCX-HVAC-AEG-1

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Warehouse	Heating	Retrocommissioning	sqft	Existing	0.44	3	\$0.14	9%	71%	\$81.06	70.12	81.94	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.02	3	\$0.14	9%	71%	\$81.06	14.21	16.89	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.14	9%	71%	\$81.06	2.36	2.95	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.14	9%	71%	\$81.06	82.45	105.88	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.14	9%	71%	\$81.06	18.94	24.26	COM_RCX-Lighting-AEG-1
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.14	9%	71%	\$81.06	19.11	15.66	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$240.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.12	0%	0%	\$3,996.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$7,473.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	Existing	137.98	16	\$75.53	20%	75%	\$76.52	1.76	2.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	9,585.42	25	\$14,612.03	0%	0%	\$179.91	0.00	0.00	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$302.19	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.32	45	\$0.84	15%	50%	\$302.19	6.61	7.13	Building Energy Simulation Tool

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Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$302.19	0.03	0.03	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.05	20	\$0.86	15%	25%	\$1,604.14	0.34	0.37	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	25%	\$1,604.14	0.11	0.12	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$1,604.14	0.03	0.03	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.81	45%	50%	\$9,999.00	0.36	0.39	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.21	20	\$0.81	45%	50%	\$9,999.00	-0.63	-0.68	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$9,999.00	-0.16	-0.18	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$591.35	-0.03	-0.03	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.32	45	\$1.70	15%	50%	\$591.35	1.26	1.36	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$591.35	0.33	0.36	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	9.51	18	\$0.59	15%	25%	\$3.47	0.12	0.13	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	12.58	18	\$0.59	15%	25%	\$3.47	0.15	0.16	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.55	18	\$0.59	15%	25%	\$3.47	0.04	0.04	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.13	30	\$37.07	66%	66%	\$223.81	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	17.43	30	\$37.07	66%	66%	\$223.81	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.44	30	\$37.07	66%	66%	\$223.81	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	53.79	5	\$267.96	18%	75%	\$1,342.80	0.79	0.94	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.11	15	\$0.05	10%	15%	\$68.27	0.23	0.26	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.34	14	\$5.25	6%	75%	\$145.92	8.17	9.39	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.04	15	\$0.26	15%	20%	\$1,051.24	0.56	0.61	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	309.93	15	\$189.00	19%	25%	\$87.57	0.22	0.26	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	111.69	15	\$1,273.23	19%	50%	\$1,637.00	0.45	0.51	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$0.01	19%	50%	\$72.58	1.57	1.80	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	9%	25%	\$9,999.00	0.07	0.09	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.67	15	\$0.76	3%	8%	\$147.19	1.33	1.53	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.08	15	\$0.76	3%	8%	\$147.19	0.91	1.05	HVAC_DOAS-Heating-7PLN-v5-1

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Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,178.94	15	\$7,501.21	3%	75%	\$106.58	3.11	3.58	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,942.29	15	\$7,501.21	3%	75%	\$106.58	20.87	23.92	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	New	5.13	3	\$33.20	0%	45%	\$2,584.18	0.04	0.05	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	New	146.71	15	\$410.87	3%	45%	\$405.93	6.49	7.18	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	79.08	15	\$698.92	3%	75%	\$1,281.14	6.97	7.54	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	154.29	20	\$1,958.49	8%	25%	\$394.62	0.15	0.17	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	482.83	20	\$1,958.49	8%	25%	\$394.62	5.53	6.25	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.17	5	\$0.75	1%	40%	\$230.47	1.37	1.57	STAT_WIFI-All-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.67	5	\$0.75	1%	40%	\$230.47	4.76	5.41	STAT_WIFI-All-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	1%	40%	\$230.47	1.25	1.42	STAT_WIFI-All-7PLN-v2-1
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	67.43	10	\$8.63	3%	65%	\$22.14	0.44	0.52	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	74.09	10	\$17.56	3%	65%	(\$233.16)	0.24	0.28	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	14.64	10	\$16.82	3%	65%	(\$384.74)	0.05	0.06	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	7%	20%	\$10.71	0.86	0.94	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	274.10	15	\$15.38	1%	75%	\$8.06	1.27	1.46	AEG-BEST

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Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	311.72	4	\$75.87	25%	40%	(\$200.01)	0.28	0.33	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.12	0.14	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.12	20	\$258.33	1%	30%	\$2,736.09	1.80	2.06	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.25	15	\$0.36	11%	23%	\$207.88	27.82	30.65	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.35	15	\$0.60	11%	23%	\$245.00	38.94	42.92	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	535.13	15	\$56.14	1%	3%	\$15.45	0.32	0.38	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	51.90	15	\$65.99	1%	3%	\$187.23	0.02	0.02	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	414.65	11	\$26.48	15%	30%	\$11.10	1.06	1.38	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	42.46	16	\$1,864.95	5%	15%	\$6,388.18	0.87	1.11	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.10	9	\$0.65	15%	25%	\$109.81	3.03	3.64	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	93.49	8	\$56.85	15%	25%	\$121.86	1.48	1.78	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	116.90	7	\$3,486.31	15%	30%	\$6,512.65	2.52	3.05	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	129.85	12	\$50.74	0%	0%	\$62.40	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1

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Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	38.10	4	\$24.51	0%	0%	\$209.42	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	163.34	15	\$347.21	0%	0%	\$323.35	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	133.49	2	\$10.74	0%	0%	\$63.30	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	4.04	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	70.94	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	513.01	15	\$305.13	0%	0%	\$186.92	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	2,054.48	15	\$539.09	0%	0%	\$39.91	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	4,316.49	10	\$449.00	0%	0%	\$19.05	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	288.09	16	\$153.90	0%	0%	\$80.37	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	103.60	15	\$135.00	0%	0%	\$201.52	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,435.23	16	\$105.92	0%	0%	\$12.69	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,104.85	10	\$521.11	0%	0%	\$100.34	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	15.29	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	874.52	12	\$5,648.09	0%	0%	\$1,091.85	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	57.77	8	\$15.90	0%	0%	\$54.35	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	5.95	8	\$3.87	0%	0%	\$128.34	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	20.92	5	\$49.37	0%	0%	\$630.48	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,530.87	5	\$288.64	25%	75%	\$50.38	0.28	0.33	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	467.73	18	\$8,815.42	25%	50%	\$2,511.93	1.63	1.77	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	73.87	15	\$335.00	0%	0%	\$158.82	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	229.21	15	\$335.00	0%	0%	\$158.82	0.00	0.00	AEG - BEST
Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	7.60	4	\$37.32	10%	50%	\$1,403.08	0.66	0.67	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.41	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$2.36	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,004.65	18	\$4,231.40	0%	0%	\$561.34	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.66	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	68.04	7	\$423.28	0%	0%	(\$1,359.00)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$1,359.00)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$1,359.00)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	10,449.56	15	\$1,114.41	0%	0%	\$121.15	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$121.15	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,532.06	6	\$37.07	1%	3%	\$1.58	0.71	0.78	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.17	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.30	25	\$4.24	10%	15%	\$241.20	0.72	0.78	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	New	1.18	25	\$4.24	10%	15%	\$241.20	2.51	2.69	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.05	25	\$4.24	10%	15%	\$241.20	0.66	0.70	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.07	25	\$4.24	10%	15%	\$241.20	0.48	0.51	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.51	25	\$4.24	10%	15%	\$241.20	24.86	26.91	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.24	10%	15%	\$241.20	4.33	4.70	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.05	3	\$0.14	3%	11%	\$148.84	0.05	0.06	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.14	3%	11%	\$148.84	0.17	0.20	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.14	3%	11%	\$148.84	0.04	0.05	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.14	3%	11%	\$148.84	0.03	0.04	COM_SEM-Water Heating-AEG-1
Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.14	3%	11%	\$148.84	0.42	0.51	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.14	3%	11%	\$148.84	0.10	0.12	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.14	3%	11%	\$148.84	0.04	0.03	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.14	3%	11%	\$148.84	0.07	0.07	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	New	0.06	3	\$0.19	9%	71%	\$162.36	2.95	3.26	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	New	0.25	3	\$0.19	9%	71%	\$162.36	10.22	11.27	COM_CX-HVAC-AEG-1

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Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.19	9%	71%	\$162.36	2.68	2.95	COM_CX-HVAC-AEG-1
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.19	9%	71%	\$162.36	0.65	0.72	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.19	9%	71%	\$162.36	84.42	94.53	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.19	9%	71%	\$162.36	14.71	16.52	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.19	9%	71%	\$162.36	3.84	3.52	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	New	0.06	3	\$0.06	0%	0%	\$51.53	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	New	0.25	3	\$0.06	0%	0%	\$51.53	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.06	0%	0%	\$51.53	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.06	0%	0%	\$51.53	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.06	0%	0%	\$51.53	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.06	0%	0%	\$51.53	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.06	0%	0%	\$51.53	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.06	10	\$0.09	0%	0%	\$245.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.03	10	\$1.12	0%	0%	\$4,467.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$8,354.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	New	137.98	16	\$75.53	20%	75%	\$76.52	0.22	0.26	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	9,482.86	25	\$14,596.87	0%	0%	\$182.45	0.00	0.00	WHP Analysis
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.10	45	\$0.84	15%	35%	\$163.58	0.66	0.75	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.44	45	\$0.84	15%	35%	\$163.58	1.07	1.19	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$163.58	0.92	1.04	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.86	15%	50%	\$1,919.89	0.45	0.51	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	50%	\$1,919.89	0.08	0.09	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$1,919.89	0.07	0.08	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.13	20	\$0.81	45%	50%	\$9,999.00	0.22	0.25	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.29	20	\$0.81	45%	50%	\$9,999.00	-0.18	-0.20	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$9,999.00	-0.15	-0.17	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$1.70	15%	35%	\$56.01	0.01	0.01	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.08	45	\$1.70	15%	35%	\$56.01	1.43	1.59	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.37	45	\$1.70	15%	35%	\$56.01	1.23	1.39	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.13	18	\$0.59	15%	50%	\$2.71	0.15	0.17	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	20.57	18	\$0.59	15%	50%	\$2.71	0.18	0.20	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.50	18	\$0.59	15%	50%	\$2.71	0.15	0.17	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.57	30	\$37.07	48%	48%	\$158.24	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	24.16	30	\$37.07	48%	48%	\$158.24	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.69	30	\$37.07	48%	48%	\$158.24	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,238.09	10	\$914.46	15%	75%	\$49.39	0.33	0.39	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	129.35	15	\$248.07	15%	75%	\$278.60	1.85	2.18	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	471.05	15	\$263.92	15%	75%	\$81.40	0.67	0.79	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	22.20	15	\$248.07	15%	75%	\$1,605.44	0.03	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	13,844.74	10	\$1,796.53	15%	75%	\$62.68	0.14	0.17	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	66.15	5	\$267.96	18%	75%	\$1,102.57	1.93	2.30	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.13	15	\$0.05	5%	15%	\$57.46	0.48	0.57	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.40	14	\$5.25	3%	75%	\$105.59	4.25	4.96	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	15	\$0.26	15%	20%	\$277.13	0.59	0.66	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,043.85	15	\$189.00	13%	25%	\$26.45	0.75	0.90	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	376.15	15	\$1,273.23	13%	50%	\$494.44	0.85	1.02	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.09	15	\$0.01	13%	50%	\$21.92	3.00	3.57	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	9%	25%	\$4,179.67	0.12	0.14	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.93	15	\$0.76	3%	8%	\$89.64	0.65	0.76	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.29	15	\$0.76	3%	8%	\$89.64	1.46	1.73	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,423.34	15	\$7,501.21	15%	15%	\$78.40	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,394.20	15	\$7,501.21	15%	15%	\$78.40	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	0.09	0.11	RTU_MNT-Cooling-PGE-R2-1
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	Existing	189.53	15	\$410.87	15%	45%	\$319.19	1.93	2.19	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	102.15	15	\$698.92	15%	75%	\$1,007.39	2.01	2.22	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	154.88	20	\$1,958.49	15%	25%	\$313.29	0.03	0.04	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	656.02	20	\$1,958.49	15%	25%	\$313.29	1.23	1.41	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.21	5	\$0.75	30%	40%	\$161.70	0.70	0.80	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.93	5	\$0.75	30%	40%	\$161.70	1.14	1.27	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.11	5	\$0.75	30%	40%	\$161.70	0.98	1.11	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	109.39	10	\$8.63	25%	65%	\$14.67	0.31	0.39	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	120.20	10	\$17.56	25%	65%	(\$154.53)	0.17	0.22	DHW_SHW-Water Heating-RTF-v3.1-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	23.75	10	\$16.82	25%	65%	(\$254.99)	0.03	0.04	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	604.61	11	\$37.97	15%	20%	\$11.28	0.20	0.23	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	444.70	15	\$15.38	16%	75%	\$5.34	0.77	0.96	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	505.72	4	\$75.87	25%	40%	(\$132.56)	0.53	0.66	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	97.63	2	\$5.13	15%	75%	\$31.29	0.42	0.52	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.37	20	\$258.33	1%	30%	\$2,882.91	1.33	1.66	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.27	15	\$0.36	13%	38%	\$203.80	7.94	9.24	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.38	15	\$0.60	13%	38%	\$240.20	11.12	12.94	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	581.64	15	\$56.14	1%	3%	\$15.13	0.16	0.21	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	51.10	15	\$65.99	1%	3%	\$202.39	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSrch-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	416.81	11	\$26.48	15%	30%	\$13.44	0.39	0.62	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	42.68	16	\$1,864.95	5%	15%	\$7,731.44	0.26	0.42	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.31	9	\$0.65	15%	25%	\$55.57	1.66	2.13	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	100.26	8	\$56.85	15%	25%	\$121.08	0.88	1.13	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	125.36	7	\$3,486.31	15%	30%	\$6,471.03	1.66	2.12	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	907.11	12	\$50.74	0%	0%	\$8.93	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	3,754.96	4	\$24.51	0%	0%	\$2.16	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	3,815.56	15	\$347.21	0%	0%	\$13.27	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	2,083.28	2	\$10.74	0%	0%	\$2.86	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	94.42	15	\$508.61	0%	0%	\$1,191.72	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1,657.16	15	\$5,552.98	0%	0%	\$805.24	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	11,984.06	15	\$305.13	5%	25%	\$7.67	27.69	32.95	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	47,992.93	15	\$539.09	0%	0%	\$1.64	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	100,834.03	10	\$449.00	0%	0%	\$0.78	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	10,663.55	16	\$153.90	5%	25%	\$2.07	6.85	8.32	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	3,834.77	15	\$135.00	0%	0%	\$5.20	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	108,347.40	16	\$105.92	0%	0%	\$0.14	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	83,406.94	10	\$521.11	0%	0%	\$1.12	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	20,044.07	8	\$18,135.52	0%	0%	\$178.64	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	20,428.86	12	\$605.15	0%	0%	\$4.80	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	403.61	8	\$15.90	0%	0%	\$7.78	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	41.59	8	\$3.87	0%	0%	\$18.37	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	146.17	5	\$49.37	0%	0%	\$90.25	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,059.09	5	\$288.64	25%	75%	\$72.82	8.95	10.42	VEND_CTRL-Miscellaneous-SCE-17R0-50
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,804.92	18	\$8,815.42	25%	50%	\$662.19	1.57	1.77	COOK_EXHD-Food Preparation-7PLN-v3-10

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Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	74.75	15	\$335.00	0%	0%	\$126.63	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	309.43	15	\$335.00	0%	0%	\$126.63	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.76	4	\$37.32	10%	50%	\$1,811.80	0.57	0.55	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$4.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,876.82	18	\$4,231.40	0%	0%	\$147.98	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1

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Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.75	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	110.39	7	\$423.28	0%	0%	(\$900.68)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$900.68)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$900.68)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	16,953.05	15	\$1,114.41	0%	0%	\$80.29	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$80.29	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,082.00	6	\$37.07	1%	3%	\$2.15	0.27	0.29	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.14	0%	0%	\$1,307.26	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$272.59	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	0.93	25	\$4.24	0%	0%	\$272.59	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.24	0%	0%	\$272.59	0.00	0.00	ADVNC-AII-RSRCH-1

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Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.24	0%	0%	\$272.59	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.24	0%	0%	\$272.59	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.11	25	\$4.24	0%	0%	\$272.59	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$1.41	3%	11%	\$463.64	0.17	0.20	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$1.41	3%	11%	\$463.64	0.27	0.31	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$1.41	3%	11%	\$463.64	0.23	0.27	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$1.41	3%	11%	\$463.64	0.08	0.10	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$1.41	3%	11%	\$463.64	0.57	0.73	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$1.41	3%	11%	\$463.64	0.13	0.17	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.71	3	\$1.41	3%	11%	\$463.64	6.09	6.52	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$1.41	3%	11%	\$463.64	0.07	0.07	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.08	3	\$0.34	0%	0%	\$58.66	0.00	0.00	COM_CX-HVAC-AEG-1

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Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.35	3	\$0.34	0%	0%	\$58.66	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.34	0%	0%	\$58.66	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.34	0%	0%	\$58.66	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.34	0%	0%	\$58.66	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.34	0%	0%	\$58.66	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.63	3	\$0.34	0%	0%	\$58.66	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.08	3	\$0.11	0%	0%	\$18.62	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.35	3	\$0.11	0%	0%	\$18.62	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.11	0%	0%	\$18.62	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.11	0%	0%	\$18.62	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.11	0%	0%	\$18.62	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.11	0%	0%	\$18.62	0.00	0.00	COM_RCX-Lighting-AEG-1

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Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.63	3	\$0.11	0%	0%	\$18.62	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$240.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	5.03	10	\$1.12	0%	0%	\$36.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.30	3	\$0.24	0%	0%	\$68.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	2.44	10	\$3.24	0%	0%	\$216.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.49	10	\$0.70	0%	0%	\$235.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	Existing	192.44	16	\$75.53	20%	75%	\$54.86	0.15	0.18	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	6,374.23	25	\$9,655.70	0%	0%	\$175.00	0.00	0.00	WHP Analysis
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$380.13	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.25	45	\$0.84	15%	50%	\$380.13	0.27	0.29	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$380.13	0.01	0.01	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.04	20	\$0.86	15%	50%	\$2,039.99	0.12	0.13	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.86	15%	50%	\$2,039.99	0.02	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$2,039.99	0.02	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.81	45%	50%	\$9,999.00	0.04	0.04	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.17	20	\$0.81	45%	50%	\$9,999.00	-0.03	-0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.81	45%	50%	\$9,999.00	-0.03	-0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$671.74	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.25	45	\$1.70	15%	50%	\$671.74	0.05	0.06	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$671.74	0.06	0.06	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	7.13	18	\$0.59	15%	50%	\$4.21	0.04	0.05	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	9.98	18	\$0.59	15%	50%	\$4.21	0.02	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.55	18	\$0.59	15%	50%	\$4.21	0.02	0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.59	30	\$37.07	66%	66%	\$268.54	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2

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Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	13.83	30	\$37.07	66%	66%	\$268.54	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.24	30	\$37.07	66%	66%	\$268.54	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,026.90	10	\$914.46	15%	75%	\$78.04	0.02	0.03	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	80.97	15	\$248.07	15%	75%	\$440.23	0.17	0.20	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	294.85	15	\$263.92	15%	75%	\$128.62	0.06	0.07	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	10.25	15	\$248.07	15%	75%	\$3,479.25	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	8,830.21	10	\$1,796.53	15%	75%	\$98.28	0.01	0.01	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	40.69	5	\$267.96	18%	75%	\$1,768.43	0.08	0.10	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.08	15	\$0.05	10%	15%	\$90.80	0.02	0.03	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.23	14	\$5.25	6%	75%	\$183.92	0.33	0.38	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	15	\$0.26	15%	20%	\$373.08	0.10	0.11	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	873.33	15	\$189.00	19%	25%	\$31.08	0.04	0.04	VENT_PMSM-Ventilation-AEG-2016-2

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Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	314.70	15	\$1,273.23	19%	50%	\$580.96	0.08	0.09	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.06	15	\$0.01	19%	50%	\$25.76	0.27	0.31	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	9%	25%	\$5,626.82	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.53	15	\$0.76	3%	8%	\$146.98	0.05	0.06	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.21	15	\$0.76	3%	8%	\$146.98	0.16	0.18	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	884.00	15	\$7,501.21	3%	15%	\$135.16	0.05	0.06	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,094.51	15	\$7,501.21	3%	15%	\$135.16	0.14	0.16	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	5.13	3	\$33.20	0%	45%	\$2,584.18	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	New	114.98	15	\$410.87	3%	45%	\$517.95	0.39	0.43	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	61.98	15	\$698.92	3%	75%	\$1,634.69	0.42	0.45	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	120.92	20	\$1,958.49	8%	25%	\$493.66	0.01	0.01	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	388.38	20	\$1,958.49	8%	25%	\$493.66	0.22	0.25	DHP-Cooling/Heating-7PLN-v2-1

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Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.13	5	\$0.75	1%	40%	\$270.05	0.13	0.15	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.53	5	\$0.75	1%	40%	\$270.05	0.19	0.22	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.08	5	\$0.75	1%	40%	\$270.05	0.22	0.25	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	107.20	10	\$8.63	3%	65%	\$13.93	0.05	0.06	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	117.79	10	\$17.56	3%	65%	(\$146.66)	0.03	0.03	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	23.28	10	\$16.82	3%	65%	(\$242.00)	0.01	0.01	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	592.48	11	\$37.97	7%	20%	\$10.71	0.10	0.11	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	435.78	15	\$15.38	1%	75%	\$5.07	0.15	0.17	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	495.58	4	\$75.87	25%	40%	(\$125.81)	0.03	0.04	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	New	95.67	2	\$5.13	15%	75%	\$29.69	0.01	0.02	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kWh	New	12.12	20	\$258.33	1%	30%	\$2,736.09	0.22	0.25	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.25	15	\$0.36	13%	38%	\$207.88	3.82	4.21	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.35	15	\$0.60	13%	38%	\$245.00	5.35	5.89	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	535.13	15	\$56.14	1%	3%	\$15.45	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	51.90	15	\$65.99	1%	3%	\$187.23	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	414.65	11	\$26.48	15%	30%	\$11.10	0.07	0.09	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	42.46	16	\$1,864.95	5%	15%	\$6,388.18	0.05	0.07	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.16	9	\$0.65	15%	25%	\$55.93	0.19	0.23	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	93.49	8	\$56.85	15%	25%	\$121.86	0.09	0.11	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	116.90	7	\$3,486.31	15%	30%	\$6,512.65	0.16	0.19	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	907.11	12	\$50.74	0%	0%	\$8.93	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	3,764.90	4	\$24.51	0%	0%	\$2.14	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	3,832.86	15	\$347.21	0%	0%	\$13.05	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	2,083.28	2	\$10.74	0%	0%	\$2.86	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	94.84	15	\$508.61	0%	0%	\$1,171.79	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1,664.68	15	\$5,552.98	0%	0%	\$791.77	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	12,038.42	15	\$305.13	5%	25%	\$7.54	4.12	4.74	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	48,210.62	15	\$539.09	0%	0%	\$1.61	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	101,291.39	10	\$449.00	0%	0%	\$0.77	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	10,708.77	16	\$153.90	5%	25%	\$2.04	1.05	1.22	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	3,851.03	15	\$135.00	0%	0%	\$5.12	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	108,347.40	16	\$105.92	0%	0%	\$0.14	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	83,406.94	10	\$521.11	0%	0%	\$1.12	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	715.86	8	\$215.90	0%	0%	\$59.55	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	20,521.52	12	\$5,648.09	0%	0%	\$44.05	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	403.61	8	\$15.90	0%	0%	\$7.78	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	41.59	8	\$3.87	0%	0%	\$18.37	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	146.17	5	\$49.37	0%	0%	\$90.25	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,059.09	5	\$288.64	25%	75%	\$72.82	0.61	0.72	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,317.96	18	\$8,815.42	25%	50%	\$891.46	0.29	0.31	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	58.36	15	\$335.00	0%	0%	\$198.66	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	183.95	15	\$335.00	0%	0%	\$198.66	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	5.58	4	\$37.32	10%	50%	\$1,911.54	0.03	0.03	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.50	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.50	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.50	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$1.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,830.88	18	\$4,231.40	0%	0%	\$199.22	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.05	0%	0%	\$5,211.09	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	108.17	7	\$423.28	0%	0%	(\$854.81)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$854.81)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$854.81)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	16,613.00	15	\$1,114.41	0%	0%	\$76.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$76.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6

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Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,082.00	6	\$37.07	1%	3%	\$2.15	0.03	0.04	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.12	0%	0%	\$1,183.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	15%	\$263.14	0.07	0.08	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	0.94	25	\$4.24	10%	15%	\$263.14	0.10	0.11	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.15	25	\$4.24	10%	15%	\$263.14	0.11	0.12	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.11	25	\$4.24	10%	15%	\$263.14	0.06	0.06	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.51	25	\$4.24	10%	15%	\$263.14	1.54	1.67	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.24	10%	15%	\$263.14	0.27	0.29	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.03	3	\$1.08	3%	11%	\$401.89	0.00	0.01	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.14	3	\$1.08	3%	11%	\$401.89	0.01	0.01	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$1.08	3%	11%	\$401.89	0.01	0.01	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$1.08	3%	11%	\$401.89	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$1.08	3%	11%	\$401.89	0.03	0.03	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$1.08	3%	11%	\$401.89	0.01	0.01	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.71	3	\$1.08	3%	11%	\$401.89	0.27	0.29	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$1.08	3%	11%	\$401.89	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.05	3	\$0.15	0%	0%	\$28.22	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.20	3	\$0.15	0%	0%	\$28.22	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.03	3	\$0.15	0%	0%	\$28.22	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.01	3	\$0.15	0%	0%	\$28.22	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.15	0%	0%	\$28.22	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.15	0%	0%	\$28.22	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.63	3	\$0.15	0%	0%	\$28.22	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.05	3	\$0.05	0%	0%	\$8.96	0.00	0.00	COM_RCX-HVAC-AEG-1

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Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.05	0%	0%	\$8.96	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.05	0%	0%	\$8.96	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.05	0%	0%	\$8.96	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.05	0%	0%	\$8.96	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.05	0%	0%	\$8.96	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.63	3	\$0.05	0%	0%	\$8.96	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.06	10	\$0.09	0%	0%	\$245.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	5.02	10	\$1.12	0%	0%	\$36.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.30	3	\$0.24	0%	0%	\$68.74	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	2.44	10	\$3.24	0%	0%	\$217.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.49	10	\$0.70	0%	0%	\$236.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	New	192.44	16	\$75.53	20%	75%	\$54.86	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	6,282.32	25	\$9,616.42	0%	0%	\$177.93	0.00	0.00	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.00	20	\$0.81	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	0.00	20	\$0.81	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	0.00	20	\$0.81	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$1.70	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$1.70	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$1.70	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool

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Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	0.00	30	\$37.07	48%	48%	\$0.00	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	0.00	30	\$37.07	48%	48%	\$0.00	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.00	30	\$37.07	48%	48%	\$0.00	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	0.00	5	\$267.96	18%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.00	15	\$0.05	5%	15%	\$0.00	0.00	0.00	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.00	14	\$5.25	3%	75%	\$0.00	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.00	15	\$0.26	15%	20%	\$0.00	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	0.00	15	\$189.00	0%	0%	\$0.00	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	0.00	15	\$1,273.23	0%	0%	\$0.00	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.00	15	\$0.01	13%	50%	\$0.00	0.00	0.00	FAN_VSD-Ventilation-MIDATL-v3.0-13

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Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	9%	25%	\$0.00	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.00	15	\$0.76	3%	8%	\$0.00	0.00	0.00	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.00	15	\$0.76	3%	8%	\$0.00	0.00	0.00	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	0.00	15	\$7,501.21	15%	15%	\$0.00	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.00	15	\$7,501.21	15%	15%	\$0.00	0.00	0.00	HVLS-Heating-AEG-1
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	0.00	3	\$33.20	15%	45%	\$0.00	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	Existing	0.00	15	\$410.87	15%	45%	\$0.00	0.00	0.00	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	0.00	15	\$698.92	15%	75%	\$0.00	0.00	0.00	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	0.00	20	\$391.70	15%	25%	\$0.00	0.00	0.00	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	0.00	20	\$391.70	15%	25%	\$0.00	0.00	0.00	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.00	5	\$0.75	30%	40%	\$0.00	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.00	5	\$0.75	30%	40%	\$0.00	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.00	5	\$0.75	30%	40%	\$0.00	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	0.00	10	\$8.63	25%	65%	\$0.00	0.00	0.00	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	0.00	10	\$17.56	25%	65%	\$0.00	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	0.00	10	\$16.82	25%	65%	\$0.00	0.00	0.00	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	0.00	11	\$37.97	15%	20%	\$0.00	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	0.00	15	\$15.38	16%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	0.00	4	\$75.87	25%	40%	\$0.00	0.00	0.00	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	0.00	2	\$5.13	15%	75%	\$0.00	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-4
Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	0.00	20	\$258.33	1%	30%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.36	3%	23%	\$0.00	0.00	0.00	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.60	3%	23%	\$0.00	0.00	0.00	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	0.00	15	\$56.14	1%	3%	\$0.00	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	0.00	15	\$65.99	1%	3%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	0.00	11	\$26.48	15%	30%	\$0.00	0.00	0.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	0.00	16	\$1,864.95	5%	15%	\$0.00	0.00	0.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.00	9	\$0.65	15%	25%	\$0.00	0.00	0.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	0.00	8	\$56.85	15%	25%	\$0.00	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	0.00	7	\$3,486.31	15%	30%	\$0.00	0.00	0.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	0.00	12	\$50.74	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	0.00	4	\$24.51	0%	0%	\$0.00	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	0.00	15	\$347.21	0%	0%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	0.00	2	\$10.74	0%	0%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.00	15	\$508.61	0%	0%	\$0.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	0.00	15	\$5,552.98	0%	0%	\$0.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	0.00	15	\$305.13	0%	0%	\$0.00	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	0.00	15	\$539.09	0%	0%	\$0.00	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	0.00	10	\$449.00	0%	0%	\$0.00	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1

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Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	0.00	16	\$105.92	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	0.00	10	\$521.11	0%	0%	\$0.00	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	0.00	8	\$18,135.52	0%	0%	\$0.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	0.00	12	\$605.15	0%	0%	\$0.00	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	0.00	5	\$49.37	0%	0%	\$0.00	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	0.00	5	\$288.64	25%	75%	\$0.00	0.00	0.00	VEND_CTRL-Miscellaneous-SCE-17R0-42
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	0.00	18	\$8,815.42	25%	50%	\$0.00	0.00	0.00	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	0.00	15	\$335.00	0%	0%	\$0.00	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	0.00	15	\$335.00	0%	0%	\$0.00	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	0.00	4	\$37.32	10%	50%	\$0.00	0.00	0.00	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3

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Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.00	5	\$1.01	20%	75%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.79	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.79	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.79	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.09	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	0.00	18	\$4,231.40	0%	0%	\$0.00	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.79	0%	0%	\$0.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$0.00	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$0.00	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6

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Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$0.00	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	0.00	6	\$37.07	1%	3%	\$0.00	0.00	0.00	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.00	20	\$8.09	0%	0%	\$0.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.24	0%	0%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.24	0%	0%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.24	0%	0%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.24	0%	0%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.24	0%	0%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.00	25	\$4.24	0%	0%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Heating	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Lighting-AEG-1

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Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_CX-Water Heating-AEG-1
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.00	10	\$0.09	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.00	10	\$1.12	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Miscellaneous	LED Signage	perBldg	Existing	0.00	16	\$75.53	20%	75%	\$0.00	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	0.00	25	\$443.69	0%	75%	\$0.00	0.00	0.00	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.81	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.81	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.81	45%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool

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Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	0.00	30	\$37.07	66%	66%	\$0.00	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	0.00	30	\$37.07	66%	66%	\$0.00	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.00	30	\$37.07	66%	66%	\$0.00	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	0.00	5	\$267.96	18%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.00	15	\$0.05	10%	15%	\$0.00	0.00	0.00	CVENT_NIGHTPURGE-Cooling-E3T-102-1

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Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.00	14	\$5.25	6%	75%	\$0.00	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.00	15	\$0.26	15%	20%	\$0.00	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	0.00	15	\$189.00	0%	0%	\$0.00	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	0.00	15	\$1,273.23	0%	0%	\$0.00	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.00	15	\$0.01	19%	50%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	9%	25%	\$0.00	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.00	15	\$0.76	3%	8%	\$0.00	0.00	0.00	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.00	15	\$0.76	3%	8%	\$0.00	0.00	0.00	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	0.00	15	\$7,501.21	3%	15%	\$0.00	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.00	15	\$7,501.21	3%	15%	\$0.00	0.00	0.00	HVLS-Heating-AEG-1
Data Center	Cooling	RTU - Maintenance	tonCool	New	0.00	3	\$33.20	0%	45%	\$0.00	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	New	0.00	15	\$410.87	3%	45%	\$0.00	0.00	0.00	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	0.00	15	\$698.92	3%	75%	\$0.00	0.00	0.00	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	0.00	20	\$391.70	8%	25%	\$0.00	0.00	0.00	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	0.00	20	\$391.70	8%	25%	\$0.00	0.00	0.00	DHP-Cooling/Heating-7PLN-v2-1

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Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.00	5	\$0.75	1%	40%	\$0.00	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.00	5	\$0.75	1%	40%	\$0.00	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.00	5	\$0.75	1%	40%	\$0.00	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	0.00	10	\$8.63	3%	65%	\$0.00	0.00	0.00	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	0.00	10	\$17.56	3%	65%	\$0.00	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	0.00	10	\$16.82	3%	65%	\$0.00	0.00	0.00	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	0.00	11	\$37.97	7%	20%	\$0.00	0.00	0.00	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	0.00	15	\$15.38	1%	75%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	0.00	4	\$75.87	25%	40%	\$0.00	0.00	0.00	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	New	0.00	2	\$5.13	15%	75%	\$0.00	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-4
Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	New	0.00	20	\$258.33	1%	30%	\$0.00	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.36	11%	23%	\$0.00	0.00	0.00	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.60	11%	23%	\$0.00	0.00	0.00	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	0.00	15	\$56.14	1%	3%	\$0.00	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	0.00	15	\$65.99	1%	3%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	0.00	11	\$26.48	15%	30%	\$0.00	0.00	0.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	0.00	16	\$1,864.95	5%	15%	\$0.00	0.00	0.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.00	9	\$0.65	15%	25%	\$0.00	0.00	0.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	0.00	8	\$56.85	15%	25%	\$0.00	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	0.00	7	\$3,486.31	15%	30%	\$0.00	0.00	0.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	0.00	12	\$50.74	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	0.00	4	\$24.51	0%	0%	\$0.00	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	0.00	15	\$347.21	0%	0%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	0.00	2	\$10.74	0%	0%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.00	15	\$508.61	0%	0%	\$0.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	0.00	15	\$5,552.98	0%	0%	\$0.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

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Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	0.00	15	\$305.13	0%	0%	\$0.00	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	0.00	15	\$539.09	0%	0%	\$0.00	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	0.00	10	\$449.00	0%	0%	\$0.00	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	0.00	16	\$105.92	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	0.00	10	\$521.11	0%	0%	\$0.00	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	0.00	8	\$647.70	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	0.00	12	\$5,648.09	0%	0%	\$0.00	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	0.00	5	\$49.37	0%	0%	\$0.00	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	0.00	5	\$288.64	25%	75%	\$0.00	0.00	0.00	VEND_CTRL-Miscellaneous-SCE-17R0-41
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	0.00	18	\$8,815.42	25%	50%	\$0.00	0.00	0.00	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	0.00	15	\$335.00	0%	0%	\$0.00	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	0.00	15	\$335.00	0%	0%	\$0.00	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	0.00	4	\$37.32	10%	50%	\$0.00	0.00	0.00	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.00	5	\$0.96	20%	75%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.71	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.71	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.71	10%	35%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.08	10%	15%	\$0.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	0.00	18	\$4,231.40	0%	0%	\$0.00	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.08	0%	0%	\$0.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$0.00	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$0.00	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$0.00	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	0.00	6	\$37.07	1%	3%	\$0.00	0.00	0.00	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.00	20	\$7.28	0%	0%	\$0.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	New	0.00	25	\$4.24	10%	15%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Heating	Advanced New Construction Designs	sqft	New	0.00	25	\$4.24	10%	15%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	0.00	25	\$4.24	10%	15%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.00	25	\$4.24	10%	15%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	0.00	25	\$4.24	10%	15%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1

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Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.00	25	\$4.24	10%	15%	\$0.00	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Heating	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_CX-Water Heating-AEG-1
Data Center	Interior Lighting	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.00	2%	65%	\$0.00	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_RCX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.00	10	\$0.09	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.00	10	\$1.12	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$0.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Miscellaneous	LED Signage	perBldg	New	0.00	16	\$75.53	20%	75%	\$0.00	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	0.00	25	\$443.69	0%	75%	\$0.00	0.00	0.00	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$0.84	15%	35%	\$225.25	27.56	31.64	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.32	45	\$0.84	15%	35%	\$225.25	50.63	57.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$225.25	12.99	14.64	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.16	20	\$0.86	15%	50%	\$703.10	25.34	29.10	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$703.10	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$703.10	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.18	20	\$0.81	45%	50%	\$9,999.00	15.67	17.99	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.22	20	\$0.81	45%	50%	\$9,999.00	-8.44	-9.50	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$9,999.00	-3.82	-4.30	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.04	45	\$1.70	15%	35%	\$119.22	-3.85	-4.42	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.44	45	\$1.70	15%	35%	\$119.22	67.50	76.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.24	45	\$1.70	15%	35%	\$119.22	30.53	34.41	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	1.55	18	\$0.59	15%	50%	\$9,999.00	5.47	6.28	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.83	18	\$0.59	15%	50%	\$9,999.00	-4.43	-4.98	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.47	18	\$0.59	15%	50%	\$9,999.00	-2.00	-2.26	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.51	30	\$37.07	48%	48%	\$197.33	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.85	30	\$37.07	48%	48%	\$197.33	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.69	30	\$37.07	48%	48%	\$197.33	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	908.50	10	\$914.46	15%	75%	\$179.91	5.66	6.81	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	92.38	15	\$248.07	15%	75%	\$398.72	79.99	96.31	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	215.69	15	\$263.92	15%	75%	\$181.68	18.68	22.49	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	7,319.98	10	\$1,796.53	15%	75%	\$120.07	16.23	18.90	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	31.78	5	\$267.96	18%	75%	\$2,312.15	128.36	154.37	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.18	15	\$0.05	5%	15%	\$42.70	34.39	41.93	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.64	14	\$5.25	3%	75%	\$216.57	203.52	240.94	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	15	\$0.26	15%	20%	\$276.04	14.54	16.39	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	432.75	15	\$189.00	0%	0%	\$63.66	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	155.94	15	\$1,273.23	0%	0%	\$1,190.09	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.09	15	\$0.03	13%	25%	\$52.76	24.04	28.50	FAN_VSD-Ventilation-MIDATL-v3.0-13
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	21%	47%	\$4,163.33	4.92	5.84	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.69	15	\$0.76	7%	16%	\$112.60	51.26	60.69	HVAC_DOAS-Heating-7PLN-v5-25

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Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.29	15	\$0.76	7%	16%	\$112.60	60.21	71.39	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,943.77	15	\$7,501.21	15%	15%	\$98.81	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,158.29	15	\$7,501.21	15%	15%	\$98.81	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	8.45	3	\$33.20	15%	45%	\$1,592.52	19.34	23.51	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	Existing	88.99	15	\$410.87	15%	45%	\$679.76	183.96	209.10	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	47.97	15	\$698.92	15%	75%	\$2,145.37	190.52	211.21	RTU_PREC-Cooling-XCELCO-2017-18-1
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	71.24	20	\$685.47	15%	25%	\$370.01	4.08	5.15	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	173.40	20	\$685.47	15%	25%	\$370.01	34.29	39.34	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	30%	40%	\$188.94	50.00	57.40	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.69	5	\$0.75	30%	40%	\$188.94	53.85	60.63	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.11	5	\$0.75	30%	40%	\$188.94	24.35	27.45	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	55.34	10	\$8.63	25%	65%	\$28.24	21.46	26.49	DHW_AER-Water Heating-ILTRM-v4.0-1
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	60.81	10	\$17.56	25%	65%	(\$297.44)	11.79	14.55	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	12.02	10	\$16.82	25%	65%	(\$490.81)	2.29	2.79	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	613.56	11	\$37.97	15%	20%	\$10.83	13.54	15.51	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15

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Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	224.92	15	\$15.38	16%	75%	\$10.29	52.96	64.44	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	255.84	4	\$75.87	25%	40%	(\$255.15)	36.64	44.57	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.08	2	\$5.13	15%	75%	\$30.02	28.80	35.04	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kWh	Existing	12.55	20	\$258.33	1%	30%	\$2,765.79	91.73	111.60	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.41	15	\$0.36	3%	23%	\$145.28	199.40	245.75	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.57	15	\$0.60	3%	23%	\$171.22	279.16	344.05	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	148.91	15	\$56.14	1%	3%	\$64.02	5.86	8.50	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	50.07	15	\$65.99	1%	3%	\$223.81	0.23	0.34	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,165.99	11	\$26.48	15%	30%	\$2.59	50.10	80.85	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	221.79	16	\$1,864.95	5%	15%	\$1,490.73	34.20	55.19	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.39	9	\$0.65	15%	25%	\$54.96	67.19	87.54	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	98.10	8	\$56.85	15%	25%	\$126.51	35.71	46.53	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	122.67	7	\$3,486.31	15%	30%	\$6,761.48	66.98	87.27	CLTG_EXT_PV-Exterior Lighting-AEG-2

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Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	23.86	12	\$50.74	0%	0%	\$352.92	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	11.73	4	\$24.51	0%	0%	\$898.20	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.32	15	\$347.21	0%	0%	\$2,042.80	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	31.47	2	\$10.74	0%	0%	\$289.26	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.68	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	11.87	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	85.81	15	\$305.13	0%	0%	\$1,180.92	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	343.63	15	\$539.09	0%	0%	\$252.17	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	721.98	10	\$449.00	0%	0%	\$120.33	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	59.52	16	\$153.90	0%	0%	\$463.91	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	21.40	15	\$135.00	0%	0%	\$1,163.25	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	334.58	16	\$105.92	0%	0%	\$61.19	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1

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Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	257.57	10	\$521.11	0%	0%	\$483.89	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	100.94	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	146.27	12	\$605.15	0%	0%	\$739.06	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	10.65	8	\$15.90	0%	0%	\$307.13	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.10	8	\$3.87	0%	0%	\$725.22	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.86	5	\$49.37	0%	0%	\$3,562.30	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,431.98	5	\$288.64	25%	75%	\$56.53	27.80	33.44	VEND_CTRL-Miscellaneous-SCE-17R0-47
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,808.08	18	\$8,815.42	25%	50%	\$659.60	39.06	44.02	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	96.75	15	\$335.00	0%	0%	\$153.64	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	226.82	15	\$335.00	0%	0%	\$153.64	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.10	4	\$37.32	10%	50%	\$877.16	28.87	28.49	SMARTSTRIP-Electronics-RTF-v3.2-1
Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$21.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$5.26	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	582.54	18	\$4,231.40	0%	5%	\$982.67	4.17	4.70	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	65.74	10	\$19.59	15%	75%	\$53.20	0.22	0.25	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	29.71	5	\$18,906.62	15%	75%	\$9,999.00	0.03	0.03	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.19	0%	0%	\$5,905.04	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	55.84	7	\$423.28	0%	0%	(\$1,697.96)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.58	7	\$423.28	0%	0%	(\$1,697.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.58	7	\$423.28	0%	0%	(\$1,697.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	8,576.50	15	\$1,114.41	0%	5%	\$154.05	34.11	41.50	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	27.82	15	\$1,114.41	0%	5%	\$154.05	0.02	0.03	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,085.94	6	\$37.07	1%	3%	\$8.06	11.64	12.81	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.22	0%	5%	\$1,307.26	1.55	1.82	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.24	0%	0%	\$210.73	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.24	0%	0%	\$210.73	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.24	0%	0%	\$210.73	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.35	25	\$4.24	0%	0%	\$210.73	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.86	25	\$4.24	0%	0%	\$210.73	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.24	0%	0%	\$210.73	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.08	3	\$0.33	5%	16%	\$251.71	16.39	19.99	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.33	5%	16%	\$251.71	17.66	20.90	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.33	5%	16%	\$251.71	7.99	9.47	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.06	3	\$0.33	5%	16%	\$251.71	7.54	9.17	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.33	5%	16%	\$251.71	29.17	41.13	COM_SEM-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.33	5%	16%	\$251.71	7.29	9.50	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.33	5%	16%	\$251.71	3.13	2.87	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.33	5%	16%	\$251.71	5.20	5.13	COM_SEM-Office Equipment-AEG-1

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Miscellaneous	Cooling	Commissioning	sqft	Existing	0.11	3	\$0.40	0%	0%	\$253.26	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	Existing	0.26	3	\$0.40	0%	0%	\$253.26	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.40	0%	0%	\$253.26	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.03	3	\$0.40	0%	0%	\$253.26	0.00	0.00	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.17	3	\$0.40	0%	0%	\$253.26	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.40	0%	0%	\$253.26	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.40	0%	0%	\$253.26	0.00	0.00	COM_CX-Refrigeration-AEG-1
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.11	3	\$0.13	10%	65%	\$80.39	113.49	138.36	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.13	10%	65%	\$80.39	122.23	144.70	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.13	10%	65%	\$80.39	55.29	65.55	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.13	10%	65%	\$80.39	17.39	21.16	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.17	3	\$0.13	10%	65%	\$80.39	168.27	237.32	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.13	10%	65%	\$80.39	42.06	54.80	COM_RCX-Lighting-AEG-1
Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.13	10%	65%	\$80.39	36.15	33.15	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$152.39	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.12	0%	0%	\$2,729.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.24	0%	0%	\$5,103.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	Existing	136.36	16	\$75.53	20%	75%	\$77.42	17.95	20.95	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,538.79	25	\$2,290.49	0%	0%	\$167.56	0.00	0.00	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$447.65	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.21	45	\$0.84	15%	50%	\$447.65	17.17	18.54	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$447.65	0.65	0.70	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.21	20	\$0.86	15%	50%	\$361.27	10.00	10.80	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.08	20	\$0.86	15%	50%	\$361.27	1.65	1.78	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	50%	\$361.27	1.00	1.08	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.05	20	\$0.81	45%	50%	\$9,999.00	1.26	1.36	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$9,999.00	-0.67	-0.73	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$9,999.00	-0.41	-0.44	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$797.20	-0.05	-0.06	Building Energy Simulation Tool

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Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.20	45	\$1.70	15%	50%	\$797.20	4.87	5.26	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$797.20	2.94	3.18	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	1.22	18	\$0.59	15%	50%	\$8.60	1.29	1.39	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	6.49	18	\$0.59	15%	50%	\$8.60	2.92	3.16	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.42	18	\$0.59	15%	50%	\$8.60	1.77	1.91	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.58	30	\$37.07	66%	66%	\$285.61	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	11.63	30	\$37.07	66%	66%	\$285.61	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.47	30	\$37.07	66%	66%	\$285.61	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	728.07	10	\$914.46	15%	75%	\$214.64	0.66	0.76	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	74.03	15	\$248.07	15%	75%	\$475.69	11.60	13.22	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	172.85	15	\$263.92	15%	75%	\$216.75	2.71	3.09	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	5,729.20	10	\$1,796.53	15%	75%	\$146.31	1.83	2.09	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	23.37	5	\$267.96	18%	75%	\$3,077.59	7.92	9.40	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.13	15	\$0.05	10%	15%	\$56.04	2.27	2.61	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.37	14	\$5.25	6%	75%	\$328.45	21.36	24.56	RES_HRV-Cooling-7PLN-v1-2

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Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.12	15	\$0.26	15%	20%	\$313.76	3.35	3.64	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	402.16	15	\$189.00	0%	0%	\$67.51	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	144.92	15	\$1,273.23	0%	0%	\$1,262.10	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.08	15	\$0.03	19%	25%	\$55.96	1.72	1.97	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	21%	47%	\$4,732.13	0.74	0.85	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.44	15	\$0.76	7%	16%	\$156.21	5.71	6.55	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.26	15	\$0.76	7%	16%	\$156.21	9.05	10.38	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,432.47	15	\$7,501.21	3%	15%	\$145.95	4.97	5.71	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,965.40	15	\$7,501.21	3%	15%	\$145.95	8.82	10.12	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	6.09	3	\$33.20	0%	45%	\$2,175.96	0.93	1.14	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	New	64.13	15	\$410.87	3%	45%	\$928.80	51.61	57.10	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	34.57	15	\$698.92	3%	75%	\$2,931.35	55.25	59.80	RTU_PREC-Cooling-XCELCO-2017-18-1
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	50.47	20	\$685.47	8%	25%	\$532.77	1.22	1.38	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	114.70	20	\$685.47	8%	25%	\$532.77	8.04	9.10	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.21	5	\$0.75	1%	40%	\$266.56	13.45	15.33	STAT_WIFI-All-7PLN-v2-1

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Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.45	5	\$0.75	1%	40%	\$266.56	12.33	14.03	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.10	5	\$0.75	1%	40%	\$266.56	7.45	8.47	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	51.22	10	\$8.63	3%	65%	\$29.52	3.81	4.51	DHW_AER-Water Heating-ILTRM-v4.0-1
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	56.28	10	\$17.56	3%	65%	(\$310.93)	2.09	2.48	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	11.12	10	\$16.82	3%	65%	(\$513.07)	0.47	0.55	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	567.89	11	\$37.97	7%	20%	\$11.32	7.31	8.05	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	208.18	15	\$15.38	1%	75%	\$10.75	10.89	12.59	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	236.80	4	\$75.87	25%	40%	(\$266.73)	2.40	2.88	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	New	91.70	2	\$5.13	15%	75%	\$31.38	1.00	1.22	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kBtuh	New	11.62	20	\$258.33	1%	30%	\$2,891.26	15.47	17.84	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.39	15	\$0.36	11%	23%	\$136.74	72.74	82.40	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.54	15	\$0.60	11%	23%	\$161.16	101.84	115.36	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	140.72	15	\$56.14	1%	3%	\$61.49	0.94	1.17	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	51.79	15	\$65.99	1%	3%	\$196.40	0.04	0.05	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,156.59	11	\$26.48	15%	30%	\$2.13	9.99	12.96	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	220.83	16	\$1,864.95	5%	15%	\$1,227.71	8.17	10.38	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.20	9	\$0.65	15%	25%	\$56.81	8.58	10.51	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	90.23	8	\$56.85	15%	25%	\$130.75	4.18	5.15	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	112.82	7	\$3,486.31	15%	30%	\$6,988.17	7.14	8.83	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	22.67	12	\$50.74	0%	0%	\$357.34	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	9.83	4	\$24.51	0%	0%	\$999.61	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	24.50	15	\$347.21	0%	0%	\$2,173.85	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	24.96	2	\$10.74	0%	0%	\$344.36	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.61	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	10.64	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	76.94	15	\$305.13	0%	0%	\$1,256.68	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	308.12	15	\$539.09	0%	0%	\$268.34	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	647.37	10	\$449.00	0%	0%	\$128.05	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	50.70	16	\$153.90	0%	0%	\$516.92	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	18.23	15	\$135.00	0%	0%	\$1,296.19	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	276.14	16	\$105.92	0%	0%	\$69.47	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	212.58	10	\$521.11	0%	0%	\$549.39	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.86	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	131.16	12	\$5,648.09	0%	0%	\$7,340.38	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	10.09	8	\$15.90	0%	0%	\$311.25	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.04	8	\$3.87	0%	0%	\$734.95	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.65	5	\$49.37	0%	0%	\$3,610.62	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,337.56	5	\$288.64	25%	75%	\$57.66	2.06	2.44	VEND_CTRL-Miscellaneous-SCE-17R0-41

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,567.79	18	\$8,815.42	25%	50%	\$749.71	9.79	10.59	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	68.54	15	\$335.00	0%	0%	\$217.03	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	153.26	15	\$335.00	0%	0%	\$217.03	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	11.74	4	\$37.32	10%	50%	\$915.98	1.81	1.85	SMARTSTRIP-Electronics-RTF-v3.2-1
Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$20.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.87	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.87	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.87	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$3.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	505.12	18	\$4,231.40	0%	5%	\$1,116.93	1.05	1.13	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	63.28	10	\$19.59	15%	75%	\$53.54	0.04	0.05	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	New	29.30	5	\$18,906.62	15%	75%	\$9,999.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.18	0%	0%	\$5,790.88	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	51.69	7	\$423.28	0%	0%	(\$1,773.66)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.56	7	\$423.28	0%	0%	(\$1,773.66)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.56	7	\$423.28	0%	0%	(\$1,773.66)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	7,938.19	15	\$1,114.41	0%	5%	\$161.03	5.62	6.50	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	25.74	15	\$1,114.41	0%	5%	\$161.03	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,085.94	6	\$37.07	1%	3%	\$8.06	1.66	1.81	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.20	0%	5%	\$1,183.00	0.27	0.31	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.37	25	\$4.24	10%	15%	\$199.12	6.96	7.46	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	0.79	25	\$4.24	10%	15%	\$199.12	6.38	6.83	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.17	25	\$4.24	10%	15%	\$199.12	3.85	4.13	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.34	25	\$4.24	10%	15%	\$199.12	3.99	4.29	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.89	25	\$4.24	10%	15%	\$199.12	70.50	78.11	ADVNC-AII-RSRCH-1
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.19	25	\$4.24	10%	15%	\$199.12	11.90	13.03	ADVNC-AII-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.06	3	\$0.21	16%	16%	\$193.17	0.00	0.00	COM_SEM-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.21	16%	16%	\$193.17	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.21	16%	16%	\$193.17	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$0.21	16%	16%	\$193.17	0.00	0.00	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.21	16%	16%	\$193.17	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.21	16%	16%	\$193.17	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.21	16%	16%	\$193.17	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.21	16%	16%	\$193.17	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	New	0.08	3	\$0.24	10%	65%	\$187.32	25.33	27.99	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	New	0.17	3	\$0.24	10%	65%	\$187.32	23.22	25.62	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	New	0.04	3	\$0.24	10%	65%	\$187.32	14.03	15.47	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	New	0.02	3	\$0.24	10%	65%	\$187.32	4.84	5.37	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.16	3	\$0.24	10%	65%	\$187.32	213.91	247.70	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.24	10%	65%	\$187.32	36.12	41.13	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.24	10%	65%	\$187.32	10.86	10.29	COM_CX-Refrigeration-AEG-1
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.08	3	\$0.08	0%	0%	\$59.46	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.17	3	\$0.08	0%	0%	\$59.46	0.00	0.00	COM_RCX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.08	0%	0%	\$59.46	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.08	0%	0%	\$59.46	0.00	0.00	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.16	3	\$0.08	0%	0%	\$59.46	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.08	0%	0%	\$59.46	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.08	0%	0%	\$59.46	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.11	10	\$0.09	0%	0%	\$146.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.06	10	\$1.12	0%	0%	\$3,113.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$5,822.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	New	136.36	16	\$75.53	20%	75%	\$77.42	2.66	3.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,514.56	25	\$2,301.77	0%	0%	\$172.82	0.00	0.00	WHP Analysis

Idaho Commercial Measures Assumptions

Table I-7 Summary of Commercial Measure Assumptions in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	42.81	20	\$18.63	14%	100%	\$36.16	119.68	115.65	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	55.15	25	\$20.82	8%	100%	\$26.05	93.15	90.16	AEG BEST
Large Office	Cooling	RTU	1 kBTU/hr	Existing	15.52	15	\$1.02	44%	100%	\$6.33	144.76	138.91	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	Existing	216.81	15	\$210.81	2%	100%	\$94.13	8.40	8.10	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	Existing	216.81	15	\$200.86	1%	100%	\$58.15	2.66	2.57	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	4.76	15	\$2.34	14%	100%	\$34.88	11.27	10.93	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	20.41	25	\$22.89	8%	100%	\$70.66	15.87	15.49	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	Existing	117.54	15	\$200.86	1%	100%	\$58.15	1.44	1.39	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.72	15	\$2.34	14%	100%	\$34.88	4.08	3.96	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.04	25	\$22.89	8%	100%	\$70.66	3.15	3.07	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	27,783.1 ₃	20	\$1,330.55	100%	100%	\$3.98	219.45	214.22	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	45%	100%	\$144.24	7.29	7.00	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	Existing	53.51	8	\$1.09	100%	100%	\$2.32	20.80	22.62	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	Existing	64.14	8	\$4.71	100%	100%	\$6.26	15.67	14.07	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	18.54	17	\$28.54	100%	100%	\$60.17	427.26	386.02	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	High-Bay Lighting	lamps	Existing	234.65	15	\$6.29	100%	100%	(\$1.78)	191.66	171.86	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	Existing	144.19	8	\$1.06	100%	100%	\$0.91	6.16	7.55	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	75.00	17	\$64.65	100%	100%	\$42.26	54.40	50.61	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,019.08	15	\$157.49	100%	100%	\$3.26	360.66	328.58	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	14%	100%	\$272.55	1.21	1.17	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	45%	100%	\$25.61	0.92	0.88	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	45%	100%	\$68.13	0.58	0.56	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	66%	100%	\$9.09	13.15	12.64	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	76%	100%	\$48.82	7.80	7.53	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	43%	100%	\$4.71	7.20	6.94	DW-Food Preparation-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	43%	100%	\$58.34	3.95	3.86	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	43%	100%	\$0.26	28.35	27.62	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	48.90	46.02	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	2.90	2.75	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	6.50	6.11	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	4.52	4.30	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	40%	10%	\$0.02	0.23	0.22	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	41.26	20	\$18.63	14%	100%	\$37.52	126.60	122.83	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	49.37	25	\$20.82	8%	100%	\$29.11	102.21	99.04	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	RTU	1 kBTU/hr	New	10.45	15	\$1.02	44%	100%	\$9.40	108.70	105.19	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	New	192.47	15	\$210.81	2%	100%	\$106.03	8.44	8.20	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	New	192.47	15	\$200.86	1%	100%	\$51.50	6.96	6.20	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	4.11	15	\$2.34	14%	100%	\$39.57	11.39	11.12	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	20.41	25	\$22.89	8%	100%	\$70.66	19.91	19.45	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	New	112.70	15	\$200.86	1%	100%	\$51.50	3.82	3.42	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.61	15	\$2.34	14%	100%	\$39.57	4.46	4.35	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.04	25	\$22.89	8%	100%	\$70.66	3.95	3.86	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	23,006.36	20	\$1,330.55	100%	100%	\$4.81	312.35	304.84	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	45%	100%	\$144.24	7.45	7.22	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	New	53.51	8	\$1.09	100%	100%	\$2.32	12.48	11.80	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	New	64.14	8	\$4.71	100%	100%	\$6.26	8.27	7.53	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	New	18.54	17	\$28.54	100%	100%	\$60.17	425.94	394.98	USDOE SSL Projections - 2016
Large Office	Interior Lighting	High-Bay Lighting	lamps	New	234.65	15	\$6.29	100%	100%	(\$1.78)	197.25	181.19	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	New	144.19	8	\$1.06	100%	100%	\$0.91	3.52	3.59	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	New	75.00	17	\$64.65	100%	100%	\$42.26	52.88	50.04	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,019.08	15	\$157.49	100%	100%	\$3.26	394.26	367.87	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	14%	100%	\$272.55	1.34	1.31	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	45%	100%	\$25.61	0.84	0.81	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	45%	100%	\$68.13	0.53	0.52	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	New	15,272.59	10	\$1,104.16	66%	100%	\$9.09	13.50	13.12	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	76%	100%	\$48.82	7.60	7.41	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	43%	100%	\$4.71	5.50	5.35	DW-Food Preparation-XCELCO-2017-18-1
Large Office	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	43%	100%	\$58.34	5.19	5.08	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	43%	100%	\$0.26	35.60	34.68	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	34.71	33.19	CEL_PCDT-Office Equipment-7PTN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	2.01	1.93	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	3.79	3.60	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	3.07	2.95	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	40%	10%	\$0.02	0.18	0.17	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	Existing	16.61	15	\$1.02	66%	100%	\$5.92	1,233.40	1,183.59	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$93.36	81.90	80.74	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	21.84	25	\$22.89	8%	100%	\$65.25	90.22	88.07	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$93.36	11.37	11.21	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.64	25	\$22.89	8%	100%	\$65.25	19.16	18.70	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	17,568.19	20	\$1,330.55	100%	100%	\$6.29	1,035.08	1,010.41	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	60%	100%	\$144.24	46.09	44.24	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	Existing	50.07	8	\$1.09	100%	100%	\$2.45	105.88	115.13	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	Existing	78.43	8	\$4.71	100%	100%	\$5.12	113.32	101.75	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	20.08	17	\$28.54	100%	100%	\$56.84	2,283.49	2,074.99	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	Existing	340.22	15	\$6.29	100%	100%	(\$1.24)	1,520.64	1,368.13	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	Existing	110.35	8	\$1.06	100%	100%	\$0.95	93.50	92.09	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	95.81	17	\$64.65	100%	100%	\$33.02	128.43	119.60	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	912.50	15	\$157.49	100%	100%	\$3.64	2,490.05	2,269.27	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	9%	100%	\$272.55	24.09	23.39	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	5%	100%	\$25.61	4.67	4.49	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	5%	100%	\$68.13	2.05	2.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	4%	100%	\$9.09	27.15	26.24	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	4%	100%	\$48.82	4.16	4.02	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	4%	100%	\$4.71	39.79	38.52	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	4%	100%	\$58.34	12.56	12.26	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	Existing	45,440.35	20	\$142.38	4%	100%	\$0.26	90.27	87.76	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	138.80	130.63	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	8.23	7.82	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	18.44	17.33	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	38.53	36.63	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	20%	10%	\$0.02	2.02	1.92	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	New	10.41	15	\$1.02	66%	100%	\$9.44	861.44	833.61	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$73.28	22.77	22.18	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	21.84	25	\$22.89	8%	100%	\$65.25	113.18	110.57	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$73.28	13.69	13.33	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.64	25	\$22.89	8%	100%	\$65.25	24.04	23.48	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	New	15,968.81	20	\$1,330.55	100%	100%	\$6.93	1,442.82	1,408.14	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	60%	100%	\$144.24	47.09	45.67	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	New	50.07	8	\$1.09	100%	100%	\$2.45	62.12	58.75	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	New	78.43	8	\$4.71	100%	100%	\$5.12	60.61	55.18	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	New	20.08	17	\$28.54	100%	100%	\$56.84	2,256.59	2,099.82	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	New	340.22	15	\$6.29	100%	100%	(\$1.24)	1,533.43	1,409.77	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	New	110.35	8	\$1.06	100%	100%	\$0.95	61.23	55.12	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	New	95.81	17	\$64.65	100%	100%	\$33.02	124.72	118.08	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	New	912.50	15	\$157.49	100%	100%	\$3.64	2,758.79	2,577.02	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	9%	100%	\$272.55	26.67	26.09	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	5%	100%	\$25.61	4.09	3.98	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	5%	100%	\$68.13	1.30	1.27	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	New	15,272.59	10	\$1,104.16	4%	100%	\$9.09	29.21	28.51	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	4%	100%	\$48.82	4.06	3.95	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	4%	100%	\$4.71	16.92	16.52	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	4%	100%	\$58.34	17.62	17.27	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	4%	100%	\$0.26	115.93	113.28	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	98.52	94.21	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	5.71	5.47	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	10.75	10.22	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	26.12	25.08	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	20%	10%	\$0.02	1.52	1.46	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	27.32	20	\$2.19	1%	100%	\$50.29	6.05	5.85	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	36.21	25	\$20.82	1%	100%	\$39.68	4.68	4.53	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	10.93	15	\$1.02	79%	100%	\$8.99	168.91	162.14	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	31,666.78	20	\$1,330.55	100%	100%	\$3.49	324.13	316.46	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Water Heating	Water Heater	1 kBtu/hr	Existing	1.24	13	\$1.69	61%	100%	\$144.24	6.60	6.33	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	Existing	145.89	8	\$1.09	100%	100%	\$1.06	26.74	35.73	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	Existing	348.39	8	\$4.71	100%	100%	\$1.15	69.02	61.63	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	123.57	17	\$64.65	100%	100%	\$25.58	658.23	613.06	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	711.18	15	\$6.29	100%	100%	(\$0.59)	337.93	303.63	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	Existing	151.63	8	\$1.06	100%	100%	\$0.83	13.31	14.99	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	110.31	17	\$64.65	100%	100%	\$28.66	16.64	15.50	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	934.64	15	\$157.49	100%	100%	\$3.55	136.32	124.24	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	14%	100%	\$272.55	1.95	1.89	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	52%	100%	\$25.61	3.35	3.21	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	52%	100%	\$68.13	1.06	1.02	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Oven	1 unit	Existing	15,272.5 ₉	10	\$1,104.16	49%	100%	\$9.09	12.00	11.54	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	45%	100%	\$48.82	5.47	5.28	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	40%	100%	\$4.71	8.24	7.95	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	40%	100%	\$58.34	4.35	4.24	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	40%	100%	\$0.26	31.16	30.36	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	4.18	3.93	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.25	0.24	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	0.55	0.52	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	82%	10%	\$0.04	0.51	0.49	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	0.09	0.08	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	23.48	20	\$2.19	1%	100%	\$47.45	5.27	5.12	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	29.44	25	\$20.82	1%	100%	\$48.81	4.35	4.21	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	New	9.32	15	\$1.02	79%	100%	\$10.54	149.27	144.47	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	27,406.71	20	\$1,330.55	100%	100%	\$4.04	401.22	391.60	AEG-BEST
Large Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	61%	100%	\$144.24	6.22	6.03	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	New	145.89	8	\$1.09	100%	100%	\$1.06	15.68	16.97	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	New	348.39	8	\$4.71	100%	100%	\$1.15	38.18	34.80	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Interior Lighting	Linear Lighting	lamps	New	123.57	17	\$64.65	100%	100%	\$25.58	594.65	562.92	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	New	711.18	15	\$6.29	100%	100%	(\$0.59)	342.22	316.08	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	New	151.63	8	\$1.06	100%	100%	\$0.83	7.51	7.27	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	110.31	17	\$64.65	100%	100%	\$28.66	15.03	14.23	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	New	934.64	15	\$157.49	100%	100%	\$3.55	129.47	120.23	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	14%	100%	\$272.55	1.97	1.92	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	52%	100%	\$25.61	2.82	2.74	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	52%	100%	\$68.13	0.90	0.88	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Food Preparation	Oven	1 unit	New	15,272.59	10	\$1,104.16	49%	100%	\$9.09	11.49	11.17	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	45%	100%	\$48.82	4.92	4.79	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	40%	100%	\$4.71	5.62	5.47	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	40%	100%	\$58.34	5.34	5.22	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	40%	100%	\$0.26	36.52	35.59	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	2.77	2.65	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.16	0.15	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.30	0.29	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	82%	10%	\$0.04	0.32	0.31	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	0.06	0.06	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	Existing	11.89	15	\$1.02	67%	100%	\$8.26	751.51	721.41	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	15.62	25	\$22.89	8%	100%	\$92.64	55.10	53.80	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	3.03	25	\$22.89	8%	100%	\$92.64	10.68	10.42	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	10,287.20	20	\$1,330.55	100%	100%	\$10.75	507.02	495.03	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	62%	100%	\$144.24	28.52	27.38	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	Existing	96.29	8	\$1.09	100%	100%	\$1.60	84.99	113.56	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	Existing	229.94	8	\$4.71	100%	100%	\$1.74	219.36	195.87	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	81.56	17	\$64.65	100%	100%	\$38.76	2,091.86	1,948.33	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	469.38	15	\$6.29	100%	100%	(\$0.89)	1,073.96	964.95	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	Existing	151.63	8	\$1.06	100%	100%	\$0.83	64.10	72.17	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	110.31	17	\$64.65	100%	100%	\$28.66	80.13	74.64	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	934.64	15	\$157.49	100%	100%	\$3.55	656.41	598.22	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	5%	100%	\$272.55	3.82	3.71	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	5%	100%	\$25.61	1.77	1.70	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	5%	100%	\$68.13	0.78	0.76	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	4%	100%	\$9.09	16.55	16.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	4%	100%	\$48.82	2.50	2.42	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	4%	100%	\$4.71	24.25	23.48	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	4%	100%	\$58.34	7.75	7.57	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	Existing	45,440.35	20	\$142.38	4%	100%	\$0.26	55.47	53.94	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	6.81	6.41	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.41	0.39	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	0.90	0.85	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	7.65	7.28	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	1.90	1.81	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	New	8.93	15	\$1.02	67%	100%	\$11.01	584.26	565.46	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$110.11	4.59	4.55	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	15.62	25	\$22.89	8%	100%	\$92.64	64.28	62.80	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$110.11	2.63	2.60	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	3.03	25	\$22.89	8%	100%	\$92.64	12.45	12.17	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	9,703.14	20	\$1,330.55	100%	100%	\$11.40	683.99	667.59	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	62%	100%	\$144.24	26.89	26.08	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	New	96.29	8	\$1.09	100%	100%	\$1.60	49.83	53.93	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	New	229.94	8	\$4.71	100%	100%	\$1.74	121.34	110.60	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	New	81.56	17	\$64.65	100%	100%	\$38.76	1,889.80	1,788.98	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	New	469.38	15	\$6.29	100%	100%	(\$0.89)	1,087.57	1,004.49	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	New	151.63	8	\$1.06	100%	100%	\$0.83	36.15	35.01	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	110.31	17	\$64.65	100%	100%	\$28.66	72.37	68.51	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	New	934.64	15	\$157.49	100%	100%	\$3.55	623.44	578.94	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	5%	100%	\$272.55	3.83	3.75	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	5%	100%	\$25.61	1.41	1.37	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	5%	100%	\$68.13	0.45	0.44	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	New	15,272.5 ₉	10	\$1,104.16	4%	100%	\$9.09	16.20	15.81	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	4%	100%	\$48.82	2.25	2.19	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	4%	100%	\$4.71	9.39	9.16	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	4%	100%	\$58.34	9.79	9.59	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	New	45,440.3 ₅	20	\$142.38	4%	100%	\$0.26	64.34	62.88	COOK_STM-Food Preparation-RTF-v2.4-2
Small Retail	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	4.52	4.32	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.26	0.25	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.49	0.47	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	4.79	4.60	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	1.39	1.34	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	10.25	15	\$1.02	73%	100%	\$9.59	138.43	132.89	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	9,097.43	20	\$1,330.55	100%	100%	\$12.16	89.97	87.84	AEG-BEST
Restaurant	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	58%	100%	\$144.24	34.89	33.50	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	Existing	116.53	8	\$1.09	100%	100%	\$1.09	66.43	71.15	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	Existing	738.24	8	\$4.71	100%	100%	\$0.54	107.71	96.40	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	139.68	17	\$64.65	100%	100%	\$22.65	258.32	240.55	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	Existing	1,089.73	15	\$6.29	100%	100%	(\$0.40)	274.13	249.56	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	Existing	112.93	8	\$1.06	100%	100%	\$0.94	10.10	10.27	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	112.62	17	\$64.65	100%	100%	\$28.09	54.38	50.64	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	914.63	15	\$157.49	100%	100%	\$3.63	244.31	222.61	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	7%	100%	\$272.55	39.18	38.06	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	97%	100%	\$25.61	41.38	39.68	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	97%	100%	\$68.13	12.61	12.23	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Food Preparation	Oven	1 unit	Existing	15,272.5 ₉	10	\$1,104.16	0%	100%	\$9.09	168.41	163.22	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	Existing	0.00	8	\$814.12	0%	100%	\$0.00	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	53%	100%	\$4.71	366.61	353.39	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	0%	100%	\$58.34	41.59	40.61	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	Existing	45,440.3 ₅	20	\$142.38	0%	100%	\$0.26	296.85	288.40	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	2.67	2.51	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.13	0.12	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	0.35	0.33	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	50%	10%	\$0.04	1.96	1.87	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	0.74	0.71	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Restaurant	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	New	7.60	15	\$1.02	73%	100%	\$12.93	106.32	102.90	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	7,679.45	20	\$1,330.55	100%	100%	\$14.40	106.56	104.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	58%	100%	\$144.24	32.89	31.91	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	New	116.53	8	\$1.09	100%	100%	\$1.09	45.31	42.93	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	New	738.24	8	\$4.71	100%	100%	\$0.54	72.26	66.81	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	New	139.68	17	\$64.65	100%	100%	\$22.65	233.36	220.88	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	New	1,089.73	15	\$6.29	100%	100%	(\$0.40)	243.29	224.64	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	New	112.93	8	\$1.06	100%	100%	\$0.94	5.47	4.97	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	112.62	17	\$64.65	100%	100%	\$28.09	49.13	46.50	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	New	914.63	15	\$157.49	100%	100%	\$3.63	241.13	224.49	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	7%	100%	\$272.55	39.38	38.53	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	97%	100%	\$25.61	34.77	33.73	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	97%	100%	\$68.13	11.12	10.86	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Food Preparation	Oven	1 unit	New	15,272.5 ₉	10	\$1,104.16	0%	100%	\$9.09	163.30	159.68	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	New	0.00	8	\$814.12	0%	100%	\$0.00	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	53%	100%	\$4.71	266.81	259.41	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	0%	100%	\$58.34	51.37	50.39	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	New	45,440.3 ₅	20	\$142.38	0%	100%	\$0.26	332.14	325.01	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	1.77	1.69	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.08	0.08	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.19	0.18	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	50%	10%	\$0.04	1.22	1.17	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	0.55	0.52	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	51.59	20	\$18.63	1%	100%	\$30.01	3.61	3.48	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	91.21	25	\$20.82	0%	100%	\$16.24	3.46	3.35	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	Existing	17.87	15	\$1.02	71%	100%	\$5.50	164.98	158.32	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	12,204.74	20	\$1,330.55	100%	100%	\$9.06	81.37	79.43	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	63%	100%	\$144.24	11.38	10.92	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	Existing	149.95	8	\$1.09	100%	100%	\$0.90	24.47	26.53	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	Existing	299.57	8	\$4.71	100%	100%	\$1.34	28.64	25.68	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	157.53	17	\$64.65	100%	100%	\$19.99	762.89	708.93	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	Existing	788.19	15	\$6.29	100%	100%	(\$0.53)	282.36	253.16	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	Existing	167.48	8	\$1.06	100%	100%	\$0.80	16.60	19.37	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	106.13	17	\$64.65	100%	100%	\$29.68	60.14	55.90	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	881.51	15	\$157.49	100%	100%	\$3.76	264.44	240.66	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	83%	100%	\$272.55	27.28	26.42	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	99%	100%	\$25.61	5.44	5.21	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	99%	100%	\$68.13	3.29	3.19	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	11%	100%	\$9.09	13.55	13.06	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	87%	100%	\$48.82	33.58	32.43	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	55%	100%	\$4.71	31.45	30.31	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	73%	100%	\$58.34	23.82	23.22	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Grocery	Food Preparation	Steamer	1 unit	Existing	45,440.35	20	\$142.38	20%	100%	\$0.26	57.99	56.50	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	1.76	1.66	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	64%	10%	\$0.07	0.07	0.07	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	0.23	0.22	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	0.98	0.93	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	0.61	0.58	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	44.40	20	\$18.63	1%	100%	\$34.87	3.43	3.33	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	74.15	25	\$20.82	0%	100%	\$19.98	3.45	3.34	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	New	15.30	15	\$1.02	71%	100%	\$6.42	157.47	152.38	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$82.51	2.21	2.16	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$96.37	3.71	3.69	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$82.51	0.70	0.69	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$96.37	0.41	0.41	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	16,656.18	20	\$1,330.55	100%	100%	\$6.64	177.50	173.23	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	63%	100%	\$144.24	11.63	11.28	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	New	149.95	8	\$1.09	100%	100%	\$0.90	22.58	21.74	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	New	299.57	8	\$4.71	100%	100%	\$1.34	15.82	14.40	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Linear Lighting	lamps	New	157.53	17	\$64.65	100%	100%	\$19.99	742.04	701.53	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	New	788.19	15	\$6.29	100%	100%	(\$0.53)	317.45	293.66	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	New	167.48	8	\$1.06	100%	100%	\$0.80	10.45	10.36	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Linear Lighting	lamps	New	106.13	17	\$64.65	100%	100%	\$29.68	58.50	55.31	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	New	881.51	15	\$157.49	100%	100%	\$3.76	289.39	269.85	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	83%	100%	\$272.55	28.01	27.34	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	99%	100%	\$25.61	4.92	4.77	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	99%	100%	\$68.13	3.15	3.08	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	New	15,272.59	10	\$1,104.16	11%	100%	\$9.09	14.73	14.35	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	87%	100%	\$48.82	32.74	31.89	COOK_FRY-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	55%	100%	\$4.71	25.31	24.60	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	73%	100%	\$58.34	30.00	29.33	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	20%	100%	\$0.26	78.77	76.81	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	1.25	1.20	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	64%	10%	\$0.07	0.05	0.05	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.14	0.13	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	0.66	0.64	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	0.48	0.46	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	51.61	20	\$18.63	17%	100%	\$30.00	107.40	103.78	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	75.76	25	\$20.82	67%	100%	\$19.01	721.93	698.70	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	Existing	17.19	15	\$1.02	11%	100%	\$5.72	28.33	27.19	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	Existing	240.17	15	\$210.81	0%	100%	\$84.97	1.09	1.05	PTAC-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	5.26	15	\$2.34	1%	100%	\$55.48	1.17	0.99	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	22.52	25	\$22.89	1%	100%	\$60.18	1.42	1.39	AEG BEST
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	2.43	15	\$2.34	1%	100%	\$55.48	0.30	0.26	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	6.19	25	\$22.89	1%	100%	\$60.18	0.39	0.38	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	32,281.06	20	\$1,330.55	100%	100%	\$3.43	230.71	225.20	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	4%	100%	\$144.24	1.25	1.20	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	Existing	91.17	8	\$1.09	100%	100%	\$1.01	42.51	38.34	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	Existing	164.92	8	\$4.71	100%	100%	\$2.43	22.71	20.34	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	Existing	142.21	17	\$64.65	100%	100%	\$22.26	686.16	638.15	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	Existing	786.05	15	\$6.29	100%	100%	(\$0.53)	342.16	306.54	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	Existing	88.05	8	\$1.06	100%	100%	\$1.03	2.57	2.38	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	Existing	108.96	17	\$64.65	100%	100%	\$29.05	14.28	13.28	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	Existing	880.24	15	\$157.49	100%	100%	\$3.76	109.39	99.57	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	50%	100%	\$272.55	2.96	2.87	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	90%	100%	\$25.61	3.40	3.26	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	90%	100%	\$68.13	1.03	1.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	70%	100%	\$9.09	45.34	43.57	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	81%	100%	\$48.82	27.05	26.12	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	53%	100%	\$4.71	26.81	25.84	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	53%	100%	\$58.34	15.67	15.29	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	53%	100%	\$0.26	112.50	109.57	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	6.56	6.17	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.16	0.15	CEL_PCLT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	0.87	0.82	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	0.72	0.69	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	0.45	0.43	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	New	39.07	20	\$18.63	17%	100%	\$39.63	90.69	87.99	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	New	54.09	25	\$20.82	67%	100%	\$26.64	646.01	625.92	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	New	14.85	15	\$1.02	11%	100%	\$6.62	27.93	27.03	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	New	213.21	15	\$210.81	0%	100%	\$95.72	1.12	1.09	PTAC-Cooling-AEG-v2-1
Health	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	New	5.85	15	\$2.34	1%	100%	\$55.95	1.65	1.48	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	New	22.52	25	\$22.89	1%	100%	\$60.18	1.83	1.79	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.36	15	\$2.34	1%	100%	\$55.95	0.21	0.19	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	New	6.19	25	\$22.89	1%	100%	\$60.18	0.50	0.49	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	New	24,028.27	20	\$1,330.55	100%	100%	\$4.60	299.44	292.24	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	4%	100%	\$144.24	1.31	1.27	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	New	91.17	8	\$1.09	100%	100%	\$1.01	32.90	28.79	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	New	164.92	8	\$4.71	100%	100%	\$2.43	12.71	11.55	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	New	142.21	17	\$64.65	100%	100%	\$22.26	683.30	646.44	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	New	786.05	15	\$6.29	100%	100%	(\$0.53)	379.38	349.78	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	New	88.05	8	\$1.06	100%	100%	\$1.03	1.61	1.39	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	New	108.96	17	\$64.65	100%	100%	\$29.05	14.22	13.46	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	New	880.24	15	\$157.49	100%	100%	\$3.76	123.96	115.70	USDOE SSL Projections - 2016
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	50%	100%	\$272.55	3.18	3.11	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	90%	100%	\$25.61	3.16	3.06	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	90%	100%	\$68.13	1.01	0.99	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	New	15,272.5 ₉	10	\$1,104.16	70%	100%	\$9.09	47.66	46.32	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	81%	100%	\$48.82	27.06	26.36	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	53%	100%	\$4.71	22.08	21.46	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	53%	100%	\$58.34	20.69	20.23	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	New	45,440.3 ₅	20	\$142.38	53%	100%	\$0.26	142.34	138.63	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	4.75	4.55	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.11	0.11	CEL_PCLT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.52	0.49	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	0.50	0.48	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	0.37	0.35	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	38.52	20	\$18.63	27%	100%	\$40.19	1,003.98	969.98	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	Existing	8.41	15	\$1.02	45%	100%	\$11.69	370.95	355.87	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	Existing	117.46	15	\$210.81	3%	100%	\$173.75	26.33	25.40	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	Existing	117.46	15	\$200.86	2%	100%	\$74.70	18.43	17.78	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	11.03	25	\$22.89	5%	100%	\$109.06	28.89	28.20	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	Existing	142.85	15	\$200.86	2%	100%	\$74.70	22.42	21.63	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.81	25	\$22.89	5%	100%	\$109.06	12.61	12.31	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Ventilation	Ventilation	1000 CFM	Existing	15,557.4 ₂	20	\$1,330.55	100%	100%	\$7.11	802.09	782.85	AEG-BEST
College	Water Heating	Water Heater	1 kBtu/hr	Existing	1.24	13	\$1.69	64%	100%	\$144.24	70.51	67.65	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	Existing	48.56	8	\$1.09	100%	100%	\$1.88	52.96	46.79	USDOE SSL Projections - 2016
College	Interior Lighting	Exempted Lighting	lamps	Existing	42.02	8	\$4.71	100%	100%	\$9.55	19.16	17.19	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	Existing	76.92	17	\$64.65	100%	100%	\$41.18	2,284.29	2,125.26	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	Existing	421.66	15	\$6.29	100%	100%	(\$1.00)	1,299.30	1,168.49	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	Existing	177.04	8	\$1.06	100%	100%	\$0.77	4.20	5.36	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	Existing	102.29	17	\$64.65	100%	100%	\$30.97	819.55	762.50	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	Existing	677.74	15	\$157.49	100%	100%	\$4.89	301.79	274.90	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	13%	100%	\$272.55	8.99	8.72	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	27%	100%	\$25.61	4.47	4.29	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	27%	100%	\$68.13	1.48	1.43	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	21%	100%	\$9.09	47.29	45.53	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	21%	100%	\$48.82	19.52	18.84	COOK_FRY-Food Preparation-RTF-v2.3-1
College	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	21%	100%	\$4.71	46.27	44.65	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	21%	100%	\$58.34	20.21	19.73	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	Existing	45,440.35	20	\$142.38	21%	100%	\$0.26	144.81	141.13	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	33.41	31.44	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.59	0.56	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	4.44	4.18	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	3.67	3.49	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	1.15	1.09	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	Existing	150.00	7	\$234.00	90%	100%	\$44.98	9.21	8.73	CPLPUMP-Miscellaneous-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Miscellaneous	Pool Heater	1 unit	Existing	503.80	2	\$1.00	36%	100%	\$1.28	0.26	0.25	TBD
College	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	New	22.99	20	\$2.19	27%	100%	\$45.67	777.25	754.19	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	New	5.99	15	\$1.02	45%	100%	\$16.39	313.25	303.09	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	New	104.27	15	\$210.81	3%	100%	\$195.72	28.22	27.41	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	New	104.27	15	\$200.86	2%	100%	\$67.82	45.53	40.16	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	New	11.03	25	\$22.89	5%	100%	\$109.06	38.52	37.62	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	New	136.97	15	\$200.86	2%	100%	\$67.82	56.32	49.92	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.81	25	\$22.89	5%	100%	\$109.06	16.81	16.42	AEG BEST
College	Ventilation	Ventilation	1000 CFM	New	15,740.90	20	\$1,330.55	100%	100%	\$7.03	1,376.70	1,343.53	AEG-BEST
College	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	64%	100%	\$144.24	77.07	74.74	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	New	48.56	8	\$1.09	100%	100%	\$1.88	54.79	49.12	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Interior Lighting	Exempted Lighting	lamps	New	42.02	8	\$4.71	100%	100%	\$9.55	10.38	9.44	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	New	76.92	17	\$64.65	100%	100%	\$41.18	2,365.14	2,238.67	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	New	421.66	15	\$6.29	100%	100%	(\$1.00)	1,553.94	1,440.98	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	New	177.04	8	\$1.06	100%	100%	\$0.77	2.52	2.64	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	New	102.29	17	\$64.65	100%	100%	\$30.97	848.56	803.19	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	New	677.74	15	\$157.49	100%	100%	\$4.89	358.98	335.56	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	13%	100%	\$272.55	10.83	10.59	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	27%	100%	\$25.61	4.36	4.23	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	27%	100%	\$68.13	1.39	1.36	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	New	15,272.59	10	\$1,104.16	21%	100%	\$9.09	54.93	53.46	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	21%	100%	\$48.82	20.36	19.83	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	21%	100%	\$4.71	31.82	30.97	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	21%	100%	\$58.34	30.77	30.11	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	21%	100%	\$0.26	208.83	203.59	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	25.08	23.98	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.44	0.42	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	2.74	2.61	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	2.66	2.55	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	0.96	0.93	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	New	150.00	7	\$234.00	90%	100%	\$44.98	9.70	9.38	CPLPUMP-Miscellaneous-RTF-v2.1-1
College	Miscellaneous	Pool Heater	1 unit	New	503.80	2	\$1.00	36%	100%	\$1.28	0.09	0.09	TBD
College	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	18.69	20	\$2.19	22%	100%	\$27.80	288.12	278.48	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	Existing	4.20	15	\$1.02	36%	100%	\$23.38	108.98	104.58	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	Existing	58.73	15	\$210.81	2%	100%	\$347.50	7.77	7.49	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	Existing	58.73	15	\$200.86	2%	100%	\$135.04	5.44	5.25	PTHP-Cooling-AEG-v2-1
School	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	5.51	25	\$22.89	4%	100%	\$205.99	8.52	8.32	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	Existing	85.26	15	\$200.86	2%	100%	\$135.04	7.89	7.62	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	2.87	25	\$22.89	4%	100%	\$205.99	4.44	4.33	AEG BEST
School	Ventilation	Ventilation	1000 CFM	Existing	7,620.32	20	\$1,330.55	100%	100%	\$14.51	286.86	280.03	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	50%	100%	\$144.24	20.06	19.25	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	Existing	79.06	8	\$1.09	100%	100%	\$2.19	36.81	50.35	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	Existing	217.72	8	\$4.71	100%	100%	\$1.84	65.58	58.81	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	Existing	22.04	17	\$28.54	100%	100%	\$52.79	1,096.32	998.46	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	Existing	303.17	15	\$6.29	100%	100%	(\$1.38)	537.63	483.41	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	Existing	60.85	8	\$1.06	100%	100%	\$1.15	1.32	1.10	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Exterior Lighting	Linear Lighting	lamps	Existing	102.70	17	\$64.65	100%	100%	\$30.77	534.53	497.80	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	Existing	640.32	15	\$157.49	100%	100%	\$5.19	95.03	86.77	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	33%	100%	\$272.55	13.07	12.66	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	66%	100%	\$25.61	7.81	7.49	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	66%	100%	\$68.13	2.41	2.34	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	65%	100%	\$9.09	42.20	40.56	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	59%	100%	\$48.82	19.52	18.85	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	52%	100%	\$4.71	26.33	25.37	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	52%	100%	\$58.34	15.27	14.89	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	52%	100%	\$0.26	109.54	106.70	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	14.73	13.87	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.35	0.33	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	1.96	1.84	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	3.27	3.11	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	36%	10%	\$0.02	0.15	0.14	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	Existing	150.00	7	\$234.00	6%	100%	\$44.98	0.55	0.52	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	Existing	503.80	2	\$1.00	1%	100%	\$1.28	0.00	0.00	TBD
School	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
School	Cooling	Air-Cooled Chiller	1 kbtu/h	New	11.49	20	\$2.19	22%	100%	\$15.85	210.44	204.17	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	New	3.00	15	\$1.02	36%	100%	\$32.79	86.63	83.83	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	New	52.14	15	\$210.81	2%	100%	\$391.44	7.80	7.58	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	New	52.14	15	\$200.86	2%	100%	\$145.22	5.46	5.31	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	New	5.51	25	\$22.89	4%	100%	\$205.99	10.69	10.45	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	New	81.75	15	\$200.86	2%	100%	\$145.22	8.57	8.32	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	New	2.87	25	\$22.89	4%	100%	\$205.99	5.57	5.44	AEG BEST
School	Ventilation	Ventilation	1000 CFM	New	7,710.19	20	\$1,330.55	100%	100%	\$14.34	461.92	450.82	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	50%	100%	\$144.24	20.49	19.87	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	New	79.06	8	\$1.09	100%	100%	\$2.19	36.10	38.54	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	New	217.72	8	\$4.71	100%	100%	\$1.84	34.23	31.13	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	New	22.04	17	\$28.54	100%	100%	\$52.79	1,077.35	1,003.71	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	New	303.17	15	\$6.29	100%	100%	(\$1.38)	605.49	561.26	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	New	60.85	8	\$1.06	100%	100%	\$1.15	0.92	0.76	USDOE SSL Projections - 2016
School	Exterior Lighting	Linear Lighting	lamps	New	102.70	17	\$64.65	100%	100%	\$30.77	518.57	490.98	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	New	640.32	15	\$157.49	100%	100%	\$5.19	106.72	99.92	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	33%	100%	\$272.55	13.99	13.66	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	66%	100%	\$25.61	7.09	6.88	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	66%	100%	\$68.13	2.27	2.22	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	New	15,272.5 ₉	10	\$1,104.16	65%	100%	\$9.09	43.35	42.13	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	59%	100%	\$48.82	19.03	18.53	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	52%	100%	\$4.71	21.00	20.41	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	52%	100%	\$58.34	19.70	19.27	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	New	45,440.3 ₅	20	\$142.38	52%	100%	\$0.26	135.48	131.95	COOK_STM-Food Preparation-RTF-v2.4-2
School	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	10.46	10.00	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.24	0.23	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	1.14	1.09	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	2.22	2.13	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	36%	10%	\$0.02	0.12	0.11	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	New	150.00	7	\$234.00	6%	100%	\$44.98	0.54	0.52	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	New	503.80	2	\$1.00	1%	100%	\$1.28	0.00	0.00	TBD
School	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	7.95	20	\$2.19	2%	100%	\$22.91	1.43	1.38	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	16.05	25	\$7.67	7%	100%	\$36.06	10.13	9.80	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	Existing	8.66	15	\$1.02	16%	100%	\$11.35	13.63	13.08	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	Existing	120.96	15	\$210.81	39%	100%	\$168.71	36.91	35.63	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	Existing	120.96	15	\$200.86	13%	100%	\$110.16	12.43	12.00	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	3.24	15	\$2.34	5%	100%	\$55.79	1.09	1.06	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	17.59	25	\$22.89	5%	100%	\$89.54	4.69	4.57	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	Existing	55.53	15	\$200.86	13%	100%	\$110.16	5.71	5.51	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.81	15	\$2.34	5%	100%	\$55.79	0.27	0.27	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	1.70	25	\$22.89	5%	100%	\$89.54	0.45	0.44	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	8,099.30	20	\$1,330.55	100%	100%	\$13.65	40.99	40.02	AEG-BEST
Lodging	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	50%	100%	\$144.24	12.17	11.69	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	Existing	47.39	8	\$1.09	100%	100%	\$2.05	52.68	48.72	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	Existing	253.30	8	\$4.71	100%	100%	\$1.58	49.04	43.85	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	69.89	17	\$64.65	100%	100%	\$45.36	79.84	74.53	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	Existing	566.33	15	\$6.29	100%	100%	(\$0.74)	53.98	48.57	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	Existing	56.35	8	\$1.06	100%	100%	\$1.18	2.93	2.38	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	106.84	17	\$64.65	100%	100%	\$29.67	4.33	4.04	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	817.80	15	\$157.49	100%	100%	\$4.02	264.78	241.05	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	19%	100%	\$272.55	2.02	1.96	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	59%	100%	\$25.61	1.61	1.54	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	59%	100%	\$68.13	1.01	0.98	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Food Preparation	Oven	1 unit	Existing	15,272.5 ₉	10	\$1,104.16	14%	100%	\$9.09	5.94	5.73	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	21%	100%	\$48.82	3.11	3.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	30%	100%	\$4.71	8.83	8.53	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	30%	100%	\$58.34	4.23	4.13	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	Existing	45,440.3 ₅	20	\$142.38	30%	100%	\$0.26	30.28	29.51	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	0.85	0.80	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.05	0.05	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	0.11	0.11	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	0.48	0.45	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	58%	10%	\$0.02	0.07	0.07	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	150.00	7	\$234.00	76%	100%	\$44.98	1.24	1.17	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	503.80	2	\$1.00	27%	100%	\$1.28	0.03	0.03	TBD
Lodging	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	New	7.60	20	\$2.19	2%	100%	\$23.98	1.48	1.44	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	New	13.64	25	\$7.67	7%	100%	\$42.43	9.56	9.26	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	New	8.61	15	\$1.02	16%	100%	\$11.41	13.65	13.21	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	New	107.38	15	\$210.81	39%	100%	\$190.04	33.39	32.44	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	New	107.38	15	\$200.86	13%	100%	\$121.04	11.24	10.92	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	New	3.33	15	\$2.34	5%	100%	\$56.19	1.20	1.18	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	New	17.59	25	\$22.89	5%	100%	\$89.54	5.32	5.20	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	New	53.25	15	\$200.86	13%	100%	\$121.04	5.57	5.42	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.70	15	\$2.34	5%	100%	\$56.19	0.25	0.25	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	New	1.70	25	\$22.89	5%	100%	\$89.54	0.51	0.50	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	6,730.36	20	\$1,330.55	100%	100%	\$16.43	49.81	48.62	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Water Heating	Water Heater	1 kBtu/hr	New	1.24	13	\$1.69	50%	100%	\$144.24	11.13	10.80	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	New	47.39	8	\$1.09	100%	100%	\$2.05	34.13	30.02	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	New	253.30	8	\$4.71	100%	100%	\$1.58	27.80	25.46	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	New	69.89	17	\$64.65	100%	100%	\$45.36	69.71	66.08	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	New	566.33	15	\$6.29	100%	100%	(\$0.74)	44.83	40.88	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	New	56.35	8	\$1.06	100%	100%	\$1.18	2.20	1.87	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	New	106.84	17	\$64.65	100%	100%	\$29.67	3.78	3.58	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	New	817.80	15	\$157.49	100%	100%	\$4.02	269.13	251.36	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	19%	100%	\$272.55	1.97	1.93	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	59%	100%	\$25.61	1.32	1.28	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	59%	100%	\$68.13	0.84	0.82	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Food Preparation	Oven	1 unit	New	15,272.5 ₉	10	\$1,104.16	14%	100%	\$9.09	5.69	5.54	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	21%	100%	\$48.82	2.71	2.64	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	30%	100%	\$4.71	5.42	5.28	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	30%	100%	\$58.34	5.20	5.09	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	New	45,440.3 ₅	20	\$142.38	30%	100%	\$0.26	35.42	34.52	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	0.55	0.52	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.03	0.03	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.06	0.06	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	0.29	0.28	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	58%	10%	\$0.02	0.05	0.05	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	New	150.00	7	\$234.00	76%	100%	\$44.98	1.07	1.04	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	New	503.80	2	\$1.00	27%	100%	\$1.28	0.01	0.01	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	10.74	15	\$1.02	16%	100%	\$9.15	144.70	138.88	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	Existing	149.98	15	\$210.81	1%	100%	\$136.07	10.44	10.07	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	Existing	149.98	15	\$200.86	0%	100%	\$51.90	2.94	2.84	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	3.29	15	\$2.34	2%	100%	\$34.24	3.73	3.62	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	Existing	224.65	15	\$200.86	0%	100%	\$51.90	4.40	4.25	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	3.31	15	\$2.34	2%	100%	\$34.24	3.75	3.64	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	4,213.53	20	\$1,330.55	100%	100%	\$26.25	189.90	185.39	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	52%	100%	\$144.24	10.97	10.53	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	Existing	44.64	8	\$1.09	100%	100%	\$2.32	52.32	49.71	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	Existing	24.81	8	\$4.71	100%	100%	\$16.15	29.16	26.12	USDOE SSL Projections - 2016

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Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	22.77	17	\$28.54	100%	100%	\$51.13	474.11	439.26	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	Existing	344.41	15	\$6.29	100%	100%	(\$1.22)	2,692.37	2,427.78	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	Existing	56.95	8	\$1.06	100%	100%	\$1.13	9.70	7.95	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	113.82	17	\$64.65	100%	100%	\$27.83	144.97	135.08	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	803.91	15	\$157.49	100%	100%	\$4.12	615.16	560.12	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	2%	100%	\$272.55	11.75	11.43	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	10%	100%	\$25.61	4.88	4.69	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	10%	100%	\$68.13	1.93	1.88	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	2%	100%	\$9.09	4.58	4.43	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	2%	100%	\$48.82	0.48	0.46	COOK_FRY-Food Preparation-RTF-v2.3-1

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Warehouse	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	2%	100%	\$4.71	7.11	6.89	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	2%	100%	\$58.34	2.17	2.12	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse	Food Preparation	Steamer	1 unit	Existing	45,440.35	20	\$142.38	2%	100%	\$0.26	15.55	15.11	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	10.52	9.90	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.50	0.48	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	1.40	1.31	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	89%	10%	\$0.04	10.86	10.33	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	77%	10%	\$0.02	2.26	2.15	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

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Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	New	6.79	15	\$1.02	16%	100%	\$14.48	98.67	95.49	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	New	131.24	15	\$210.81	1%	100%	\$155.50	9.99	9.71	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	New	131.24	15	\$200.86	0%	100%	\$49.54	7.31	6.68	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.43	15	\$2.34	2%	100%	\$58.11	2.62	2.57	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	New	188.30	15	\$200.86	0%	100%	\$49.54	9.82	9.00	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.47	15	\$2.34	2%	100%	\$58.11	1.59	1.56	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	3,443.38	20	\$1,330.55	100%	100%	\$32.12	223.67	218.30	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	52%	100%	\$144.24	10.81	10.48	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	New	44.64	8	\$1.09	100%	100%	\$2.32	37.27	33.30	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	New	24.81	8	\$4.71	100%	100%	\$16.15	14.66	13.32	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Linear Lighting	lamps	New	22.77	17	\$28.54	100%	100%	\$51.13	450.61	425.19	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	New	344.41	15	\$6.29	100%	100%	(\$1.22)	2,928.41	2,718.64	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	New	56.95	8	\$1.06	100%	100%	\$1.13	5.35	4.32	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	113.82	17	\$64.65	100%	100%	\$27.83	136.14	128.93	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	New	803.91	15	\$157.49	100%	100%	\$4.12	656.26	612.35	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	2%	100%	\$272.55	12.36	12.10	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	10%	100%	\$25.61	4.31	4.19	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	10%	100%	\$68.13	1.37	1.34	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	New	15,272.59	10	\$1,104.16	2%	100%	\$9.09	4.71	4.60	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	2%	100%	\$48.82	0.45	0.44	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	2%	100%	\$4.71	2.73	2.66	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	2%	100%	\$58.34	2.88	2.82	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	2%	100%	\$0.26	18.84	18.42	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	7.25	6.93	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.34	0.32	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.79	0.75	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	89%	10%	\$0.04	7.09	6.81	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	77%	10%	\$0.02	1.72	1.66	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	27.04	20	\$2.19	15%	100%	\$48.55	77.11	74.54	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	48.83	25	\$20.82	2%	100%	\$30.34	13.34	12.91	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	9.30	15	\$1.02	20%	100%	\$10.57	32.47	31.17	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	Existing	129.92	15	\$210.81	1%	100%	\$157.07	2.15	2.08	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	Existing	129.92	15	\$200.86	0%	100%	\$60.76	0.22	0.21	PTHP-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	2.85	15	\$2.34	2%	100%	\$40.00	0.75	0.73	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	Existing	190.07	15	\$200.86	0%	100%	\$60.76	0.31	0.30	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	2.80	15	\$2.34	2%	100%	\$40.00	0.73	0.71	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	12,891.6 ₉	20	\$1,330.55	100%	100%	\$8.58	122.80	119.88	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBtu/hr	Existing	1.24	13	\$1.69	53%	100%	\$144.24	4.08	3.92	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	Existing	44.64	8	\$1.09	100%	100%	\$2.32	11.06	10.51	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	Existing	24.81	8	\$4.71	100%	100%	\$16.15	6.16	5.52	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	22.77	17	\$28.54	100%	100%	\$51.13	100.20	92.84	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	Existing	344.41	15	\$6.29	100%	100%	(\$1.22)	569.02	513.10	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	Existing	56.95	8	\$1.06	100%	100%	\$1.13	2.05	1.68	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	113.82	17	\$64.65	100%	100%	\$27.83	30.64	28.55	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	803.91	15	\$157.49	100%	100%	\$4.12	130.01	118.38	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	6,521.08	10	\$333.83	92%	0%	\$6.44	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	2%	100%	\$272.55	19.02	18.50	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	92%	100%	\$25.61	52.20	50.04	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	92%	100%	\$68.13	15.88	15.40	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	41%	100%	\$9.09	6.67	6.41	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	41%	100%	\$48.82	3.20	3.09	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	41%	100%	\$4.71	5.39	5.19	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	41%	100%	\$58.34	2.89	2.82	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	41%	100%	\$0.26	20.74	20.21	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	1.63	1.54	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.08	0.07	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	0.22	0.20	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	89%	10%	\$0.04	1.68	1.60	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	77%	10%	\$0.02	0.35	0.33	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	New	17.32	20	\$2.19	15%	100%	\$10.52	51.72	50.18	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	New	31.15	25	\$20.82	2%	100%	\$47.57	10.10	9.78	AEG BEST
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	5.88	15	\$1.02	20%	100%	\$16.72	22.14	21.43	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	New	113.69	15	\$210.81	1%	100%	\$179.51	2.06	2.00	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	New	113.69	15	\$200.86	0%	100%	\$59.06	0.51	0.45	PTHP-Cooling-AEG-v2-1

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Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.10	15	\$2.34	2%	100%	\$67.67	0.53	0.52	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	New	159.31	15	\$200.86	0%	100%	\$59.06	0.67	0.59	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.24	15	\$2.34	2%	100%	\$67.67	0.31	0.30	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	10,535.34	20	\$1,330.55	100%	100%	\$10.50	144.63	141.16	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	53%	100%	\$144.24	4.02	3.90	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	New	44.64	8	\$1.09	100%	100%	\$2.32	7.88	7.04	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	New	24.81	8	\$4.71	100%	100%	\$16.15	3.10	2.81	USDOE SSL Projections - 2016

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Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	22.77	17	\$28.54	100%	100%	\$51.13	95.23	89.86	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	New	344.41	15	\$6.29	100%	100%	(\$1.22)	618.91	574.57	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	New	56.95	8	\$1.06	100%	100%	\$1.13	1.13	0.91	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	113.82	17	\$64.65	100%	100%	\$27.83	28.77	27.25	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	803.91	15	\$157.49	100%	100%	\$4.12	138.70	129.42	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	6,521.08	10	\$333.83	92%	0%	\$6.44	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	2%	100%	\$272.55	20.01	19.60	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	92%	100%	\$25.61	45.71	44.34	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	92%	100%	\$68.13	14.63	14.28	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	15,272.5 ₉	10	\$1,104.16	41%	100%	\$9.09	6.73	6.54	COOK_OVN-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	41%	100%	\$48.82	3.00	2.93	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	41%	100%	\$4.71	3.90	3.79	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	41%	100%	\$58.34	3.69	3.61	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	41%	100%	\$0.26	25.28	24.63	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	1.12	1.08	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.05	0.05	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.12	0.12	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	89%	10%	\$0.04	1.10	1.06	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	77%	10%	\$0.02	0.27	0.26	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	80.72	20	\$18.63	15%	100%	\$19.18	1.53	1.48	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	104.00	25	\$20.82	9%	100%	\$13.82	1.19	1.15	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	Existing	29.26	15	\$1.02	48%	100%	\$3.36	1.85	1.78	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	Existing	408.84	15	\$210.81	3%	100%	\$49.92	0.11	0.10	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	Existing	408.84	15	\$200.86	1%	100%	\$45.10	0.03	0.03	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	8.98	15	\$2.34	15%	100%	\$43.58	0.55	0.51	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	38.48	25	\$22.89	8%	100%	\$56.83	0.35	0.34	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	Existing	22.29	15	\$200.86	1%	100%	\$45.10	0.00	0.00	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$2.34	15%	100%	\$43.58	0.01	0.01	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.77	25	\$22.89	8%	100%	\$56.83	0.01	0.01	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	96,216.02	20	\$1,330.55	100%	100%	\$1.15	4.84	4.72	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Water Heater	1 kBtu/hr	Existing	1.24	13	\$1.69	45%	100%	\$144.24	0.01	0.01	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	Existing	63.83	8	\$1.09	100%	100%	\$1.95	0.07	0.08	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	Existing	103.73	8	\$4.71	100%	100%	\$3.87	0.07	0.07	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	70.42	17	\$64.65	100%	100%	\$45.02	1.96	1.82	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	Existing	397.71	15	\$6.29	100%	100%	(\$1.05)	0.94	0.84	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	Existing	165.24	8	\$1.06	100%	100%	\$0.80	0.01	0.02	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	100.35	17	\$64.65	100%	100%	\$31.59	0.13	0.12	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	890.78	15	\$157.49	100%	100%	\$3.73	0.57	0.52	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	14%	100%	\$272.55	0.00	0.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	5%	100%	\$25.61	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	5%	100%	\$68.13	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Oven	1 unit	Existing	15,272.5 ₉	10	\$1,104.16	4%	100%	\$9.09	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	4%	100%	\$48.82	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	4%	100%	\$4.71	0.01	0.01	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	4%	100%	\$58.34	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	Existing	45,440.3 ₅	20	\$142.38	4%	100%	\$0.26	0.01	0.01	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	0.20	0.19	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.00	0.00	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	0.03	0.03	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	100%	10%	\$0.04	2.27	2.16	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	40%	10%	\$0.02	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	New	51.02	20	\$18.63	15%	100%	\$30.34	1.03	1.00	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	New	66.33	25	\$20.82	9%	100%	\$21.66	0.90	0.88	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	New	18.50	15	\$1.02	48%	100%	\$5.31	1.26	1.22	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	New	362.95	15	\$210.81	3%	100%	\$43.94	0.27	0.25	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	New	362.95	15	\$200.86	1%	100%	\$39.44	0.09	0.08	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	New	6.61	15	\$2.34	15%	100%	\$56.44	0.43	0.38	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	New	38.48	25	\$22.89	8%	100%	\$56.83	0.43	0.42	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	New	21.37	15	\$200.86	1%	100%	\$39.44	0.00	0.00	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$2.34	15%	100%	\$56.44	0.00	0.00	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.77	25	\$22.89	8%	100%	\$56.83	0.01	0.01	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	78,629.56	20	\$1,330.55	100%	100%	\$1.41	6.56	6.41	AEG-BEST
Data Center	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	45%	100%	\$144.24	0.01	0.01	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	New	63.83	8	\$1.09	100%	100%	\$1.95	0.04	0.04	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	New	103.73	8	\$4.71	100%	100%	\$3.87	0.04	0.03	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Interior Lighting	Linear Lighting	lamps	New	70.42	17	\$64.65	100%	100%	\$45.02	1.84	1.74	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	New	397.71	15	\$6.29	100%	100%	(\$1.05)	0.94	0.86	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	New	165.24	8	\$1.06	100%	100%	\$0.80	0.01	0.01	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	New	100.35	17	\$64.65	100%	100%	\$31.59	0.12	0.12	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	New	890.78	15	\$157.49	100%	100%	\$3.73	0.61	0.56	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	14%	100%	\$272.55	0.00	0.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	5%	100%	\$25.61	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	5%	100%	\$68.13	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Food Preparation	Oven	1 unit	New	15,272.59	10	\$1,104.16	4%	100%	\$9.09	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	4%	100%	\$48.82	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1

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Data Center	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	4%	100%	\$4.71	0.00	0.00	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	4%	100%	\$58.34	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	4%	100%	\$0.26	0.02	0.01	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	0.14	0.13	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.00	0.00	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	0.02	0.01	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	100%	10%	\$0.04	1.49	1.43	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	40%	10%	\$0.02	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Data Center	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	10.72	20	\$2.19	10%	100%	\$17.00	167.41	161.75	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	9.96	25	\$7.67	5%	100%	\$79.60	92.25	89.58	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	4.29	15	\$1.02	57%	100%	\$22.92	402.20	385.85	AEG BEST
Miscellaneous	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	5.64	25	\$22.89	1%	100%	\$239.58	4.73	4.61	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	1.57	25	\$22.89	1%	100%	\$239.58	1.32	1.29	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	4,107.47	20	\$1,330.55	100%	100%	\$26.92	351.87	343.42	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	53%	100%	\$144.24	43.12	41.37	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	Existing	80.79	8	\$1.09	100%	100%	\$1.41	188.80	190.27	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Interior Lighting	Exempted Lighting	lamps	Existing	191.20	8	\$4.71	100%	100%	\$2.07	200.19	177.01	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	103.72	17	\$64.65	100%	100%	\$30.54	1,936.10	1,800.79	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	Existing	703.32	15	\$6.29	100%	100%	(\$0.61)	1,653.04	1,494.89	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	Existing	137.16	8	\$1.06	100%	100%	\$0.86	24.02	27.13	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	113.52	17	\$64.65	100%	100%	\$27.91	74.14	68.96	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	934.64	15	\$157.49	100%	100%	\$3.55	615.48	560.17	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	461.15	10	\$999.69	12%	100%	\$272.55	17.28	16.76	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	428.23	9	\$80.91	22%	100%	\$25.61	7.58	7.27	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	81.62	10	\$44.23	22%	100%	\$68.13	5.13	4.98	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	Existing	15,272.59	10	\$1,104.16	59%	100%	\$9.09	42.80	41.12	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	2,467.56	8	\$814.12	30%	100%	\$48.82	10.98	10.60	COOK_FRY-Food Preparation-RTF-v2.3-1

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Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	2,230.92	10	\$83.55	15%	100%	\$4.71	16.49	15.93	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	1,256.66	20	\$882.04	15%	100%	\$58.34	6.44	6.28	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	45,440.35	20	\$142.38	15%	100%	\$0.26	46.50	45.29	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	124.45	5	\$0.01	100%	10%	\$0.02	16.31	15.35	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	37.14	4	\$0.01	100%	10%	\$0.07	0.96	0.91	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	30.89	4	\$0.01	100%	10%	\$0.09	2.17	2.04	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	Existing	77.62	4	\$0.01	66%	10%	\$0.04	6.86	6.53	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	124.45	5	\$0.01	28%	10%	\$0.02	0.65	0.62	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	150.00	7	\$234.00	4%	100%	\$44.98	0.43	0.41	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	503.80	2	\$1.00	1%	100%	\$1.28	0.01	0.01	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	New	9.21	20	\$2.19	10%	100%	\$19.77	167.19	162.19	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	New	8.09	25	\$7.67	5%	100%	\$71.51	75.51	73.10	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	3.22	15	\$1.02	57%	100%	\$30.53	357.51	345.92	AEG BEST
Miscellaneous	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	New	5.64	25	\$22.89	1%	100%	\$239.58	6.30	6.16	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	New	1.57	25	\$22.89	1%	100%	\$239.58	1.76	1.72	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	3,874.27	20	\$1,330.55	100%	100%	\$28.54	545.91	532.75	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	53%	100%	\$144.24	47.13	45.71	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	New	80.79	8	\$1.09	100%	100%	\$1.41	147.48	135.71	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Interior Lighting	Exempted Lighting	lamps	New	191.20	8	\$4.71	100%	100%	\$2.07	128.13	115.92	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	103.72	17	\$64.65	100%	100%	\$30.54	2,003.99	1,896.38	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	New	703.32	15	\$6.29	100%	100%	(\$0.61)	1,875.23	1,738.52	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	New	137.16	8	\$1.06	100%	100%	\$0.86	14.22	13.78	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	113.52	17	\$64.65	100%	100%	\$27.91	76.74	72.62	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	934.64	15	\$157.49	100%	100%	\$3.55	658.55	610.78	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	461.15	10	\$999.69	12%	100%	\$272.55	20.79	20.33	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	New	428.23	9	\$80.91	22%	100%	\$25.61	7.41	7.19	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	81.62	10	\$44.23	22%	100%	\$68.13	4.74	4.63	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	New	15,272.59	10	\$1,104.16	59%	100%	\$9.09	47.21	45.89	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	New	2,467.56	8	\$814.12	30%	100%	\$48.82	11.46	11.16	COOK_FRY-Food Preparation-RTF-v2.3-1

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Miscellaneous	Food Preparation	Dishwasher	1 unit	New	2,230.92	10	\$83.55	15%	100%	\$4.71	10.41	10.14	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	1,256.66	20	\$882.04	15%	100%	\$58.34	10.21	9.99	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Miscellaneous	Food Preparation	Steamer	1 unit	New	45,440.35	20	\$142.38	15%	100%	\$0.26	68.86	67.16	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	124.45	5	\$0.01	100%	10%	\$0.02	12.24	11.71	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	New	37.14	4	\$0.01	100%	10%	\$0.07	0.71	0.68	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	New	30.89	4	\$0.01	100%	10%	\$0.09	1.34	1.27	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	New	77.62	4	\$0.01	66%	10%	\$0.04	4.93	4.74	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	124.45	5	\$0.01	28%	10%	\$0.02	0.53	0.51	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	150.00	7	\$234.00	4%	100%	\$44.98	0.45	0.44	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	503.80	2	\$1.00	1%	100%	\$1.28	0.00	0.00	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$0.84	15%	35%	\$50.48	7.11	7.11	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.95	45	\$0.84	15%	35%	\$50.48	27.43	26.76	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$50.48	0.55	0.55	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.24	20	\$0.86	15%	35%	\$314.66	18.88	18.87	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$314.66	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$314.66	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.82	20	\$0.81	45%	50%	\$9,338.79	10.71	10.71	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.48	20	\$0.81	45%	50%	\$9,338.79	-3.44	-3.36	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.33	20	\$0.81	45%	50%	\$9,338.79	-4.73	-4.72	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.44	45	\$1.70	15%	35%	\$54.09	-19.51	-19.50	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.49	45	\$1.70	15%	35%	\$54.09	36.57	35.69	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	1.03	45	\$1.70	15%	35%	\$54.09	50.27	50.16	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	9.75	18	\$0.59	15%	50%	\$9,999.00	7.68	7.68	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-8.56	18	\$0.59	15%	50%	\$9,999.00	-3.70	-3.61	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.91	18	\$0.59	15%	50%	\$9,999.00	-5.09	-5.08	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	10.91	30	\$37.07	48%	48%	\$76.64	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2

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Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.49	30	\$37.07	48%	48%	\$76.64	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	6.95	30	\$37.07	48%	48%	\$76.64	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,799.22	10	\$914.46	15%	75%	\$20.81	11.13	11.17	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	704.54	15	\$248.07	15%	75%	\$35.78	187.97	188.76	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,498.90	15	\$263.92	15%	75%	\$17.89	39.99	40.16	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	42.01	15	\$248.07	15%	75%	\$615.05	4.08	4.24	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	50,608.03	10	\$1,796.53	15%	75%	\$4.80	35.33	36.72	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	204.16	5	\$267.96	18%	75%	\$292.62	159.83	157.60	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.55	15	\$0.05	5%	15%	\$9.34	47.35	47.49	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.57	14	\$5.25	3%	75%	\$150.68	109.36	105.64	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.59	18	\$0.26	15%	20%	\$40.29	25.20	25.15	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	764.48	15	\$189.00	13%	25%	\$25.11	31.00	31.02	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	275.48	15	\$1,273.23	13%	50%	\$469.36	35.11	35.14	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.36	15	\$0.10	13%	50%	\$28.35	123.39	123.49	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	22%	30%	\$671.59	2.52	2.52	VENT_DCV-Ventilation-7PLN-v5-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.94	15	\$0.76	7%	10%	\$34.34	11.48	11.09	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.27	15	\$0.76	7%	10%	\$34.34	30.82	30.85	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,050.24	15	\$7,501.21	15%	30%	\$49.72	67.08	67.28	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,971.45	15	\$7,501.21	15%	30%	\$49.72	54.61	52.76	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	3.27	3.19	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	Existing	319.23	15	\$410.87	15%	45%	\$127.81	109.41	107.41	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	304.66	15	\$698.92	15%	75%	\$227.81	201.38	198.22	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	476.40	20	\$1,370.94	15%	25%	\$140.83	2.88	2.89	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	359.57	20	\$1,370.94	15%	25%	\$140.83	24.11	23.00	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	30%	40%	\$95.59	60.49	60.46	STAT_WIFI-All-7PLN-v2-1
Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$95.59	25.43	24.81	STAT_WIFI-All-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.41	5	\$0.75	30%	40%	\$95.59	34.95	34.88	STAT_WIFI-All-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	143.42	10	\$8.63	25%	65%	\$7.79	6.14	5.97	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	157.60	10	\$17.56	25%	65%	\$14.42	3.37	3.28	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	39.05	10	\$16.82	25%	65%	\$55.75	0.82	0.80	CDHW_TSRVLV-Water Heating-RTF-v1.3-1

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Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	20%	\$7.21	3.70	3.62	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	551.85	15	\$15.38	16%	75%	\$2.78	14.35	13.96	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	587.82	4	\$75.87	25%	40%	\$34.71	9.30	9.04	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	7.80	7.59	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.81	24.84	24.17	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.36	3%	23%	\$93.78	95.20	95.47	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.55	15	\$0.60	3%	23%	\$110.53	133.28	133.65	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	148.88	15	\$56.14	1%	3%	\$39.87	2.57	2.67	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.98	15	\$65.99	1%	3%	\$131.70	0.11	0.11	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,823.27	11	\$26.48	15%	30%	\$1.17	39.33	39.56	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	289.10	16	\$1,864.95	5%	15%	\$635.82	26.85	27.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.63	9	\$0.65	15%	25%	\$57.74	60.84	61.99	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	104.73	8	\$56.85	15%	25%	\$86.30	32.34	32.95	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	130.96	7	\$3,486.31	15%	30%	\$4,691.60	60.65	61.79	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	20.71	12	\$50.74	0%	0%	\$284.72	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	4.75	4	\$24.51	0%	0%	\$1,408.35	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	30.62	15	\$347.21	0%	0%	\$1,177.50	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	25.41	2	\$10.74	0%	0%	\$324.26	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.72	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	12.68	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	96.16	15	\$305.13	0%	0%	\$329.47	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	385.08	15	\$539.09	0%	0%	\$145.35	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	809.07	10	\$449.00	0%	0%	\$74.83	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	46.53	16	\$153.90	0%	0%	\$329.02	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	16.73	15	\$135.00	0%	0%	\$832.63	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	177.61	16	\$105.92	0%	0%	\$62.63	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2

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Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	136.73	10	\$521.11	0%	0%	\$539.36	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	81.49	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	163.92	12	\$605.15	0%	0%	\$439.94	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.24	8	\$15.90	0%	0%	\$266.86	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.95	8	\$3.87	0%	0%	\$630.13	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.35	5	\$49.37	0%	0%	\$3,334.25	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,638.19	5	\$288.64	25%	75%	\$39.97	6.14	6.02	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	6,909.56	18	\$8,815.42	25%	50%	\$117.22	59.88	59.75	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	330.31	15	\$335.00	0%	0%	\$58.63	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	241.46	15	\$335.00	0%	0%	\$58.63	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	118.28	4	\$37.32	10%	50%	\$78.32	107.24	92.87	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.05	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.49	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.49	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.49	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$17.60	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	8,386.87	18	\$4,231.40	0%	0%	\$46.35	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.84	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	146.86	7	\$423.28	0%	0%	\$486.60	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$486.60	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$486.60	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	23,074.37	15	\$1,114.41	0%	0%	\$4.81	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$4.81	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6

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Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	8,484.07	6	\$37.07	1%	3%	\$0.81	9.49	9.16	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.05	20	\$0.48	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	1.12	25	\$4.24	0%	0%	\$74.40	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	1.24	25	\$4.24	0%	0%	\$74.40	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.24	0%	0%	\$74.40	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$74.40	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.78	25	\$4.24	0%	0%	\$74.40	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.39	25	\$4.24	0%	0%	\$74.40	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.24	3	\$0.18	3%	14%	\$66.88	22.57	22.64	COM_SEM-HVAC-AEG-1
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.18	3%	14%	\$66.88	9.49	9.16	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.18	3%	14%	\$66.88	13.04	13.05	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.18	3%	14%	\$66.88	2.04	1.99	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.18	3%	14%	\$66.88	12.80	13.20	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.18	3%	14%	\$66.88	6.60	6.73	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.18	3%	14%	\$66.88	1.12	1.00	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.15	3	\$0.18	3%	14%	\$66.88	19.31	16.72	COM_SEM-Office Equipment-AEG-1

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Large Office	Cooling	Commissioning	sqft	Existing	0.33	3	\$0.81	0%	0%	\$278.49	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	Existing	0.25	3	\$0.81	0%	0%	\$278.49	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	Existing	0.18	3	\$0.81	0%	0%	\$278.49	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.81	0%	0%	\$278.49	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.15	3	\$0.81	0%	0%	\$278.49	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.81	0%	0%	\$278.49	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.81	0%	0%	\$278.49	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.33	3	\$0.26	11%	59%	\$88.40	136.37	136.77	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.26	11%	59%	\$88.40	57.32	55.37	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.26	11%	59%	\$88.40	78.80	78.86	COM_RCX-HVAC-AEG-1
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.26	11%	59%	\$88.40	4.11	4.00	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.26	11%	59%	\$88.40	64.46	66.46	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.26	11%	59%	\$88.40	33.24	33.87	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.26	11%	59%	\$88.40	11.25	10.10	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.11	10	\$0.09	0%	0%	\$113.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.07	10	\$1.12	0%	0%	\$2,062.18	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.24	0%	0%	\$4,523.28	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	Existing	109.60	16	\$75.53	20%	75%	\$64.31	1.72	1.63	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	11,210.24	25	\$18,394.24	0%	75%	\$127.41	95.87	92.98	WHP Analysis
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$141.00	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.38	45	\$0.84	15%	50%	\$141.00	9.82	9.59	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$141.00	0.29	0.28	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.33	20	\$0.86	15%	50%	\$220.02	24.36	23.80	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$220.02	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$220.02	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.12	20	\$0.81	45%	50%	\$9,999.00	0.82	0.80	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.20	20	\$0.81	45%	50%	\$9,999.00	-0.72	-0.70	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.81	45%	50%	\$9,999.00	-0.88	-0.86	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$193.43	-0.29	-0.28	Building Energy Simulation Tool

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Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.36	45	\$1.70	15%	50%	\$193.43	7.99	7.80	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.21	45	\$1.70	15%	50%	\$193.43	9.82	9.58	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	23.11	18	\$0.59	15%	35%	\$1.25	5.44	5.31	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	11.51	18	\$0.59	15%	35%	\$1.25	1.41	1.38	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.70	18	\$0.59	15%	35%	\$1.25	1.74	1.69	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.93	30	\$37.07	66%	66%	\$81.30	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	18.33	30	\$37.07	66%	66%	\$81.30	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.14	30	\$37.07	66%	66%	\$81.30	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	4,991.94	10	\$914.46	15%	75%	\$23.03	2.33	2.22	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	606.46	15	\$248.07	15%	75%	\$39.60	48.98	46.78	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,290.25	15	\$263.92	15%	75%	\$19.80	10.42	9.95	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	44.38	15	\$248.07	15%	75%	\$541.14	1.37	1.30	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	38,319.66	10	\$1,796.53	15%	75%	\$5.89	6.83	6.49	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	147.56	5	\$267.96	18%	75%	\$394.68	16.05	15.23	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.40	15	\$0.05	10%	15%	\$12.33	5.16	4.94	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.74	14	\$5.25	6%	75%	\$142.09	30.40	29.05	RES_HRV-Cooling-7PLN-v1-2

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Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.51	18	\$0.26	15%	20%	\$44.16	11.54	11.25	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	704.95	15	\$189.00	19%	25%	\$25.94	3.86	3.69	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	254.03	15	\$1,273.23	19%	50%	\$484.92	7.67	7.33	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.09	19%	50%	\$29.29	26.97	25.75	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	22%	30%	\$736.26	0.66	0.63	VENT_DCV-Ventilation-7PLN-v5-5
Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.97	15	\$0.70	7%	10%	\$44.48	3.37	3.22	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.70	7%	10%	\$44.48	4.07	3.88	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,397.90	15	\$7,501.21	15%	30%	\$52.85	14.61	13.99	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,405.26	15	\$7,501.21	15%	30%	\$52.85	16.31	15.59	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	New	5.64	3	\$33.20	15%	45%	\$2,008.26	0.14	0.13	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	New	207.16	15	\$410.87	15%	45%	\$194.34	33.90	32.89	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	197.71	15	\$698.92	15%	75%	\$346.39	75.71	73.91	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	377.33	20	\$1,370.94	15%	25%	\$144.35	0.88	0.85	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	412.03	20	\$1,370.94	15%	25%	\$144.35	9.75	9.35	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.56	5	\$0.75	30%	40%	\$106.26	7.38	7.09	STAT_WIFI-All-7PLN-v2-1

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Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.62	5	\$0.75	30%	40%	\$106.26	4.25	4.08	STAT_WIFI-AII-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.36	5	\$0.75	30%	40%	\$106.26	5.22	5.01	STAT_WIFI-AII-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	45.70	10	\$8.63	25%	65%	\$23.74	1.15	1.09	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	50.21	10	\$17.56	25%	65%	\$43.96	0.63	0.60	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	12.44	10	\$16.82	25%	65%	\$169.99	0.18	0.18	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	20%	\$7.33	1.37	1.33	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	527.47	15	\$15.38	1%	75%	\$2.82	4.98	4.76	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	187.28	4	\$75.87	25%	40%	\$105.84	1.02	0.96	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	0.45	0.43	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.59	7.08	6.77	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.37	15	\$0.36	11%	23%	\$95.91	54.73	53.81	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.51	15	\$0.60	11%	23%	\$113.04	76.63	75.34	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	138.81	15	\$56.14	1%	3%	\$40.78	0.61	0.60	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	0.00	15	\$65.99	1%	3%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,613.89	11	\$26.48	15%	30%	\$1.20	9.31	8.99	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	267.66	16	\$1,864.95	5%	15%	\$653.90	7.64	7.40	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.52	9	\$0.65	15%	25%	\$59.52	12.65	12.28	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	97.25	8	\$56.85	15%	25%	\$88.97	6.21	6.02	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	121.60	7	\$3,486.31	15%	30%	\$4,836.65	10.55	10.22	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	19.50	12	\$50.74	0%	0%	\$289.14	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.46	4	\$24.51	0%	0%	\$1,431.79	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	29.09	15	\$347.21	0%	0%	\$1,179.80	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	21.27	2	\$10.74	0%	0%	\$371.29	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.69	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.05	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	91.37	15	\$305.13	0%	0%	\$330.11	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

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Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	365.93	15	\$539.09	0%	0%	\$145.64	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	768.82	10	\$449.00	0%	0%	\$74.98	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	44.10	16	\$153.90	0%	0%	\$331.52	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	15.86	15	\$135.00	0%	0%	\$838.95	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	160.67	16	\$105.92	0%	0%	\$66.07	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	123.69	10	\$521.11	0%	0%	\$568.95	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.44	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	155.76	12	\$5,648.09	0%	0%	\$4,114.10	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.78	8	\$15.90	0%	0%	\$267.97	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.90	8	\$3.87	0%	0%	\$632.75	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.14	5	\$49.37	0%	0%	\$3,390.56	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,529.51	5	\$288.64	25%	75%	\$40.71	0.78	0.74	VEND_CTRL-Miscellaneous-SCE-17R0-41

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Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	6,004.59	18	\$8,815.42	25%	50%	\$128.50	27.42	26.73	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	264.88	15	\$335.00	0%	0%	\$59.63	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	278.97	15	\$335.00	0%	0%	\$59.63	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	116.96	4	\$37.32	10%	50%	\$78.72	11.62	9.98	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.05	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.30	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.30	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.30	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$9.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	7,288.42	18	\$4,231.40	0%	0%	\$50.82	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

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Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.76	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	140.37	7	\$423.28	0%	0%	\$494.58	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$494.58	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$494.58	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	22,054.80	15	\$1,114.41	0%	0%	\$4.89	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$4.89	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,828.02	6	\$37.07	1%	3%	\$2.43	2.00	1.93	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.05	20	\$0.43	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	New	1.12	25	\$4.24	10%	30%	\$71.28	73.31	71.74	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	New	1.24	25	\$4.24	10%	30%	\$71.28	42.24	41.32	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.72	25	\$4.24	10%	30%	\$71.28	51.88	50.71	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$71.28	8.57	8.38	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.79	25	\$4.24	10%	30%	\$71.28	213.82	211.61	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.40	25	\$4.24	10%	30%	\$71.28	82.05	80.93	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	New	0.17	3	\$0.15	3%	14%	\$57.46	1.50	1.42	COM_SEM-HVAC-AEG-1

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Large Office	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.15	3%	14%	\$57.46	0.86	0.82	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.15	3%	14%	\$57.46	1.06	1.00	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.15	3%	14%	\$57.46	0.18	0.17	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.15	3%	14%	\$57.46	1.09	1.07	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.15	3%	14%	\$57.46	0.56	0.54	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.15	3%	14%	\$57.46	0.09	0.08	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.15	3	\$0.15	3%	14%	\$57.46	1.62	1.39	COM_SEM-Office Equipment-AEG-1
Large Office	Cooling	Commissioning	sqft	New	0.24	3	\$0.63	11%	59%	\$233.86	56.80	55.11	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	New	0.27	3	\$0.63	11%	59%	\$233.86	32.73	31.73	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	New	0.15	3	\$0.63	11%	59%	\$233.86	40.19	38.93	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.63	11%	59%	\$233.86	2.21	2.14	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.63	11%	59%	\$233.86	138.05	136.23	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$0.63	11%	59%	\$233.86	52.98	51.99	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.63	11%	59%	\$233.86	17.97	16.78	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	New	0.24	3	\$0.20	0%	0%	\$74.24	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	New	0.27	3	\$0.20	0%	0%	\$74.24	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.20	0%	0%	\$74.24	0.00	0.00	COM_RCX-HVAC-AEG-1

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Large Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.20	0%	0%	\$74.24	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.20	0%	0%	\$74.24	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.20	0%	0%	\$74.24	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.20	0%	0%	\$74.24	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$116.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.06	10	\$1.12	0%	0%	\$2,119.26	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.02	3	\$0.24	0%	0%	\$4,648.48	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	New	109.60	16	\$75.53	20%	75%	\$64.31	0.41	0.39	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	12,172.77	25	\$18,586.01	0%	75%	\$115.24	53.80	52.49	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$0.84	15%	35%	\$95.79	154.79	154.46	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.38	45	\$0.84	15%	35%	\$95.79	142.88	140.41	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$95.79	23.79	23.27	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.41	20	\$0.86	15%	35%	\$184.16	85.79	85.61	Building Energy Simulation Tool

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Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$184.16	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$184.16	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.60	20	\$0.81	45%	50%	\$249.49	125.37	125.10	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$249.49	-23.81	-23.40	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$249.49	-14.18	-13.87	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.31	45	\$1.70	15%	35%	\$81.14	-94.36	-94.16	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.36	45	\$1.70	15%	35%	\$81.14	190.50	187.21	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.32	45	\$1.70	15%	35%	\$81.14	113.43	110.96	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.38	18	\$0.59	15%	50%	\$9,999.00	26.79	26.74	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.45	18	\$0.59	15%	50%	\$9,999.00	-17.96	-17.65	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.21	18	\$0.59	15%	50%	\$9,999.00	-10.69	-10.46	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	9.14	30	\$37.07	48%	48%	\$99.04	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	16.05	30	\$37.07	48%	48%	\$99.04	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.16	30	\$37.07	48%	48%	\$99.04	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	221.81	5	\$267.96	18%	75%	\$267.35	933.97	913.14	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.60	15	\$0.05	5%	15%	\$8.62	272.92	273.06	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.23	14	\$5.25	3%	75%	\$128.39	569.67	556.41	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.24	18	\$0.26	15%	20%	\$97.63	56.86	55.63	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	302.25	15	\$189.00	13%	25%	\$61.81	69.94	67.87	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	108.92	15	\$1,273.23	13%	25%	\$1,155.48	25.20	24.46	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.14	15	\$0.10	13%	25%	\$69.80	88.57	85.95	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	2%	56%	\$1,627.56	39.50	38.33	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.12	15	\$0.76	1%	19%	\$46.23	415.49	405.81	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.51	15	\$0.76	1%	19%	\$46.23	483.30	469.00	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,541.19	15	\$7,501.21	15%	15%	\$43.69	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,632.16	15	\$7,501.21	15%	15%	\$43.69	0.00	0.00	HVLS-Heating-AEG-1

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Small Office	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	26.02	25.43	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	Existing	341.69	15	\$410.87	15%	45%	\$119.41	932.19	915.15	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	326.10	15	\$698.92	15%	75%	\$212.83	1,715.79	1,688.90	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	499.49	20	\$1,370.94	15%	75%	\$128.56	88.86	93.21	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	436.61	20	\$1,370.94	15%	75%	\$128.56	650.88	621.07	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.83	5	\$0.75	30%	40%	\$99.43	348.65	347.91	STAT_WIFI-All-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.70	5	\$0.75	30%	40%	\$99.43	132.45	130.17	STAT_WIFI-All-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.16	5	\$0.75	30%	40%	\$99.43	78.87	77.15	STAT_WIFI-All-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	25.43	10	\$8.63	25%	65%	\$43.91	38.79	37.75	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	27.95	10	\$17.56	25%	65%	\$81.30	21.31	20.74	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	6.93	10	\$16.82	25%	65%	\$314.36	5.21	5.06	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	0%	0%	\$7.21	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	98.03	15	\$15.38	16%	75%	\$15.64	90.91	88.43	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	104.24	4	\$75.87	25%	40%	\$195.74	58.79	57.18	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	49.33	47.99	DHW_STBK-Water Heating-ILTRM-v4.0-4

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Small Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.06	20	\$258.33	1%	30%	\$1,692.84	157.16	152.87	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.44	15	\$0.36	3%	23%	\$84.01	570.56	572.16	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.62	15	\$0.60	3%	23%	\$99.02	798.78	801.03	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	99.35	15	\$56.14	1%	3%	\$59.59	15.39	15.96	CLTG_EXITLEC-Interior Lighting-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.01	15	\$65.99	1%	3%	\$131.28	1.01	1.04	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,523.55	11	\$26.48	15%	30%	\$1.30	190.32	189.93	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	258.41	16	\$1,864.95	5%	15%	\$709.38	129.92	129.66	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	3.68	9	\$0.65	15%	25%	\$25.70	380.82	387.24	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	130.06	8	\$56.85	15%	25%	\$69.65	202.41	205.82	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	162.63	7	\$3,486.31	15%	30%	\$3,786.34	379.64	386.04	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	20.16	12	\$50.74	0%	0%	\$279.57	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.05	4	\$24.51	0%	0%	\$1,287.01	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	14.46	15	\$347.21	0%	0%	\$2,121.48	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	23.11	2	\$10.74	0%	0%	\$335.20	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.34	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.99	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	45.43	15	\$305.13	0%	0%	\$593.59	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	181.93	15	\$539.09	0%	0%	\$261.88	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	382.23	10	\$449.00	0%	0%	\$134.83	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	140.45	16	\$105.92	0%	0%	\$69.98	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	108.12	10	\$521.11	0%	0%	\$602.61	0.00	0.00	RFG_DDEF-Refrigeration-VITRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	74.10	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	77.44	12	\$605.15	0%	0%	\$792.63	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.25	5	\$49.37	0%	0%	\$3,278.30	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,748.86	5	\$288.64	25%	75%	\$37.19	15.03	14.62	VEND_CTRL-Miscellaneous-SCE-17R0-42
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,775.09	18	\$8,815.42	25%	50%	\$284.07	135.12	132.18	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	346.32	15	\$335.00	0%	0%	\$53.70	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	292.45	15	\$335.00	0%	0%	\$53.70	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	73.46	4	\$37.32	10%	50%	\$123.15	373.47	313.31	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.08	5	\$0.01	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$1.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$1.64	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$13.62	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	673.68	18	\$4,231.40	0%	0%	\$561.67	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.82	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	26.04	7	\$423.28	0%	0%	\$2,743.97	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$2,743.97	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$2,743.97	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	4,091.92	15	\$1,114.41	0%	0%	\$27.14	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$27.14	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,334.76	6	\$37.07	1%	3%	\$5.15	40.07	38.68	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.04	20	\$0.36	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	1.07	25	\$4.24	0%	0%	\$81.71	0.00	0.00	ADVNC-All-RSRCH-1

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Small Office	Heating	Advanced New Construction Designs	sqft	Existing	1.20	25	\$4.24	0%	0%	\$81.71	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$81.71	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$81.71	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.87	25	\$4.24	0%	0%	\$81.71	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.24	0%	0%	\$81.71	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.26	3	\$0.16	3%	14%	\$61.88	130.09	130.16	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	Existing	0.22	3	\$0.16	3%	14%	\$61.88	49.42	48.27	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.16	3%	14%	\$61.88	29.43	28.56	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.16	3%	14%	\$61.88	12.91	12.56	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.16	3%	14%	\$61.88	76.71	78.99	COM_SEM-Lighting-AEG-1
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.16	3%	14%	\$61.88	41.32	42.02	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.16	3%	14%	\$61.88	4.14	1.88	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.10	3	\$0.16	3%	14%	\$61.88	67.25	56.42	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	Existing	0.36	3	\$0.80	0%	0%	\$280.12	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	Existing	0.30	3	\$0.80	0%	0%	\$280.12	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.80	0%	0%	\$280.12	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.80	0%	0%	\$280.12	0.00	0.00	COM_CX-Water Heating-AEG-1

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Small Office	Interior Lighting	Commissioning	sqft	Existing	0.17	3	\$0.80	0%	0%	\$280.12	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.80	0%	0%	\$280.12	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.80	0%	0%	\$280.12	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.36	3	\$0.26	11%	59%	\$88.92	786.01	786.41	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.26	11%	59%	\$88.92	298.60	291.64	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.26	11%	59%	\$88.92	177.80	172.54	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.26	11%	59%	\$88.92	26.00	25.29	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.17	3	\$0.26	11%	59%	\$88.92	386.25	397.72	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.26	11%	59%	\$88.92	208.06	211.57	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.26	11%	59%	\$88.92	41.68	18.97	COM_RCX-Refrigeration-AEG-1
Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$102.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.02	10	\$1.12	0%	0%	\$4,339.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,517.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Office	Miscellaneous	LED Signage	perBldg	Existing	107.52	16	\$75.53	20%	75%	\$65.55	45.39	42.99	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,360.32	25	\$3,872.91	0%	75%	\$127.41	132.91	128.90	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$208.35	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.26	45	\$0.84	15%	50%	\$208.35	89.63	87.54	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$208.35	1.52	1.48	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.55	20	\$0.86	15%	50%	\$131.76	107.86	105.46	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$131.76	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$131.76	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.81	45%	50%	\$9,999.00	12.07	11.80	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.10	20	\$0.81	45%	50%	\$9,999.00	-5.16	-5.04	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.81	45%	50%	\$9,999.00	-3.19	-3.11	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$2,401.28	-6.07	-5.93	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$1.70	15%	50%	\$2,401.28	6.80	6.65	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,401.28	4.20	4.10	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	25.61	18	\$0.59	15%	35%	\$0.93	31.79	31.07	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	24.09	18	\$0.59	15%	35%	\$0.93	13.17	12.85	Building Energy Simulation Tool

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Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	5.84	18	\$0.59	15%	35%	\$0.93	8.13	7.92	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.77	30	\$37.07	66%	66%	\$124.04	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	13.64	30	\$37.07	66%	66%	\$124.04	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.91	30	\$37.07	66%	66%	\$124.04	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	135.55	5	\$267.96	18%	75%	\$431.68	77.81	74.05	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.38	15	\$0.05	10%	15%	\$13.18	25.57	24.54	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.59	14	\$5.25	6%	75%	\$148.35	129.99	124.33	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.26	15%	20%	\$110.14	24.83	24.22	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	281.87	15	\$189.00	19%	25%	\$64.93	8.32	7.94	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	101.57	15	\$1,273.23	19%	25%	\$1,213.81	3.00	2.86	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.13	15	\$0.09	19%	25%	\$73.33	10.53	10.06	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	2%	56%	\$1,836.21	9.89	9.44	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.94	15	\$0.76	1%	19%	\$63.85	100.21	95.92	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.22	15	\$0.76	1%	19%	\$63.85	60.82	58.09	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,133.75	15	\$7,501.21	15%	15%	\$55.60	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,032.33	15	\$7,501.21	15%	15%	\$55.60	0.00	0.00	HVLS-Heating-AEG-1
Small Office	Cooling	RTU - Maintenance	tonCool	New	5.25	3	\$33.20	15%	45%	\$2,159.18	1.05	1.00	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	New	206.24	15	\$410.87	15%	45%	\$195.21	268.68	260.64	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	196.83	15	\$698.92	15%	75%	\$347.94	599.97	585.75	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	359.00	20	\$1,370.94	15%	75%	\$148.49	26.77	25.68	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	408.36	20	\$1,370.94	15%	75%	\$148.49	214.81	206.04	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.52	5	\$0.75	30%	40%	\$129.81	36.59	35.24	STAT_WIFI-AII-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.59	5	\$0.75	30%	40%	\$129.81	18.18	17.47	STAT_WIFI-AII-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	30%	40%	\$129.81	11.22	10.76	STAT_WIFI-AII-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	24.31	10	\$8.63	25%	65%	\$44.63	7.28	6.90	DHW_AER-Water Heating-ILTRM-v4.0-1

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Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	26.71	10	\$17.56	25%	65%	\$82.63	4.00	3.79	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	6.62	10	\$16.82	25%	65%	\$319.52	1.16	1.11	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	0%	0%	\$7.33	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	93.69	15	\$15.38	1%	75%	\$15.89	31.53	30.12	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	99.64	4	\$75.87	25%	40%	\$198.95	6.43	6.06	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	2.87	2.70	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Office	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.48	20	\$258.33	1%	30%	\$1,720.61	44.79	42.81	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.41	15	\$0.36	11%	23%	\$86.21	327.14	321.44	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.57	15	\$0.60	11%	23%	\$101.61	457.99	450.01	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	92.49	15	\$56.14	1%	3%	\$61.08	3.63	3.56	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.58	15	\$65.99	1%	3%	\$123.95	0.24	0.23	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,336.39	11	\$26.48	15%	30%	\$1.34	45.12	43.16	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	239.24	16	\$1,864.95	5%	15%	\$729.03	37.01	35.55	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	3.41	9	\$0.65	15%	25%	\$26.50	79.22	76.57	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	120.60	8	\$56.85	15%	25%	\$71.82	38.89	37.57	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	150.80	7	\$3,486.31	15%	30%	\$3,904.47	66.06	63.77	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	18.15	12	\$50.74	0%	0%	\$310.63	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.74	4	\$24.51	0%	0%	\$1,314.35	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	13.53	15	\$347.21	0%	0%	\$2,197.70	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	18.04	2	\$10.74	0%	0%	\$413.99	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.32	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	5.60	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	42.48	15	\$305.13	0%	0%	\$614.92	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	170.13	15	\$539.09	0%	0%	\$271.29	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	357.45	10	\$449.00	0%	0%	\$139.67	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

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Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	130.83	16	\$105.92	0%	0%	\$72.51	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	100.71	10	\$521.11	0%	0%	\$624.38	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.07	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	72.42	12	\$5,648.09	0%	0%	\$7,663.65	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.92	5	\$49.37	0%	0%	\$3,642.56	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,652.97	5	\$288.64	25%	75%	\$37.67	1.52	1.44	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,409.72	18	\$8,815.42	25%	50%	\$320.49	59.01	57.54	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	252.02	15	\$335.00	0%	0%	\$61.36	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	276.47	15	\$335.00	0%	0%	\$61.36	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	72.40	4	\$37.32	10%	50%	\$125.45	39.61	33.31	SMARTSTRIP-Electronics-RTF-v3.2-1

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Small Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.08	5	\$0.01	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.46	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.46	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$1.46	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$6.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	584.99	18	\$4,231.40	0%	0%	\$633.68	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.74	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	24.89	7	\$423.28	0%	0%	\$2,788.97	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$2,788.97	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$2,788.97	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	3,911.11	15	\$1,114.41	0%	0%	\$27.58	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$27.58	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,334.76	6	\$37.07	1%	3%	\$5.15	8.44	8.15	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.04	20	\$0.32	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	New	1.06	25	\$4.24	10%	25%	\$79.02	272.65	267.01	ADVNC-AII-RSRCH-1
Small Office	Heating	Advanced New Construction Designs	sqft	New	1.19	25	\$4.24	10%	25%	\$79.02	135.46	132.54	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$79.02	83.58	81.72	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$79.02	40.63	39.73	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.88	25	\$4.24	10%	25%	\$79.02	958.56	948.17	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.46	25	\$4.24	10%	25%	\$79.02	385.47	379.36	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	New	0.16	3	\$0.11	3%	14%	\$49.46	7.44	7.07	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.11	3%	14%	\$49.46	3.70	3.50	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.11	3%	14%	\$49.46	2.28	2.15	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.11	3%	14%	\$49.46	1.11	1.04	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.11	3%	14%	\$49.46	6.54	6.41	COM_SEM-Lighting-AEG-1

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Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.11	3%	14%	\$49.46	3.51	3.38	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.11	3%	14%	\$49.46	0.29	0.11	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.09	3	\$0.11	3%	14%	\$49.46	5.54	4.64	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	New	0.23	3	\$0.51	11%	59%	\$216.36	281.65	273.67	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	New	0.26	3	\$0.51	11%	59%	\$216.36	139.93	135.74	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	New	0.06	3	\$0.51	11%	59%	\$216.36	86.33	83.64	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.51	11%	59%	\$216.36	13.99	13.55	COM_CX-Water Heating-AEG-1
Small Office	Interior Lighting	Commissioning	sqft	New	0.16	3	\$0.51	11%	59%	\$216.36	825.16	813.81	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$0.51	11%	59%	\$216.36	331.82	324.76	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.51	11%	59%	\$216.36	11.82	8.65	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	New	0.23	3	\$0.16	0%	0%	\$68.68	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	New	0.26	3	\$0.16	0%	0%	\$68.68	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.16	0%	0%	\$68.68	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.16	0%	0%	\$68.68	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.16	3	\$0.16	0%	0%	\$68.68	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.16	0%	0%	\$68.68	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.16	0%	0%	\$68.68	0.00	0.00	COM_RCX-Refrigeration-AEG-1

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Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.11	10	\$0.09	0%	0%	\$104.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$5,288.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Miscellaneous	LED Signage	perBldg	New	107.52	16	\$75.53	20%	75%	\$65.55	10.73	10.25	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,573.87	25	\$3,929.92	0%	75%	\$115.24	74.91	73.09	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$57.02	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.96	45	\$0.84	15%	35%	\$57.02	18.67	18.05	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$57.02	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.28	20	\$0.86	15%	35%	\$267.30	15.16	14.99	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$267.30	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$267.30	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	1.36	20	\$0.81	45%	50%	\$270.28	12.37	12.23	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.64	20	\$0.81	45%	50%	\$270.28	-3.11	-3.01	Building Energy Simulation Tool

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Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.44	20	\$0.81	45%	50%	\$270.28	-4.41	-4.32	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.74	45	\$1.70	15%	35%	\$75.52	-26.54	-26.24	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.29	45	\$1.70	15%	35%	\$75.52	24.89	24.07	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.90	45	\$1.70	15%	35%	\$75.52	35.30	34.56	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.87	18	\$0.59	15%	25%	\$3.73	1.50	1.48	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	4.27	18	\$0.59	15%	25%	\$3.73	0.50	0.48	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.97	18	\$0.59	15%	25%	\$3.73	0.71	0.70	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	10.99	30	\$37.07	48%	48%	\$74.99	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.56	30	\$37.07	48%	48%	\$74.99	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.04	30	\$37.07	48%	48%	\$74.99	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,161.74	10	\$914.46	15%	75%	\$28.99	0.60	0.61	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	423.17	15	\$248.07	15%	75%	\$59.56	8.55	8.58	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	988.06	15	\$263.92	15%	75%	\$27.14	2.00	2.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	30.03	15	\$248.07	15%	75%	\$860.52	0.22	0.23	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	32,438.98	10	\$1,796.53	15%	75%	\$7.49	1.71	1.78	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	145.59	5	\$267.96	18%	75%	\$407.51	128.77	125.97	AEG-BEST

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Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.56	15	\$0.05	5%	15%	\$9.14	32.69	32.25	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.40	14	\$5.25	3%	75%	\$379.08	73.75	70.24	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.59	18	\$0.26	15%	20%	\$38.78	17.70	17.33	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,857.06	15	\$189.00	13%	25%	\$10.07	21.56	20.95	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	669.19	15	\$1,273.23	13%	50%	\$188.17	24.43	23.73	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.36	15	\$0.04	13%	50%	\$11.37	85.84	83.40	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.04	15	\$0.23	15%	43%	\$646.53	6.37	6.19	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.95	15	\$0.76	5%	14%	\$33.38	28.14	26.80	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.29	15	\$0.76	5%	14%	\$33.38	77.96	75.75	HVAC_DOAS-Heating-7PLN-v5-1
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,094.16	15	\$7,501.21	15%	30%	\$123.29	46.31	45.69	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.18	15	\$7,501.21	15%	30%	\$123.29	0.00	0.00	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	5.34	5.22	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	224.81	15	\$410.87	15%	45%	\$181.49	127.15	124.83	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	214.55	15	\$698.92	15%	75%	\$323.48	234.99	231.32	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	328.63	20	\$979.24	15%	25%	\$152.14	2.49	2.61	DHP-Cooling/Heating-7PLN-v2-1

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Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	239.08	20	\$979.24	15%	25%	\$152.14	24.51	23.39	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	30%	40%	\$93.39	42.15	41.68	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$93.39	17.31	16.73	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.41	5	\$0.75	30%	40%	\$93.39	24.54	24.03	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	286.85	10	\$8.63	25%	65%	\$3.89	5.44	5.30	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	315.19	10	\$17.56	25%	65%	\$7.21	2.99	2.91	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	78.10	10	\$16.82	25%	65%	\$27.87	0.73	0.71	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	0%	0%	\$7.21	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,103.79	15	\$15.38	16%	75%	\$1.39	12.76	12.41	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,175.64	4	\$75.87	25%	40%	\$17.36	8.26	8.04	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	6.93	6.74	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.59	22.08	21.48	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.72	15	\$0.36	3%	23%	\$51.31	115.94	116.09	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.01	15	\$0.60	3%	23%	\$60.48	162.32	162.53	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	576.27	15	\$56.14	1%	3%	\$10.46	3.21	3.36	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.04	15	\$65.99	1%	3%	\$133.57	0.12	0.12	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,916.46	11	\$26.48	15%	30%	\$0.67	45.15	45.33	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	503.44	16	\$1,864.95	5%	15%	\$364.91	30.82	30.95	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.47	9	\$0.65	15%	25%	\$40.50	27.38	29.14	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	87.76	8	\$56.85	15%	25%	\$109.43	14.55	15.49	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	109.74	7	\$3,486.31	15%	30%	\$5,948.95	27.30	29.05	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	98.22	12	\$50.74	4%	25%	\$60.02	2.21	2.15	RFG_ASH-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	22.42	4	\$24.51	4%	25%	\$298.03	0.29	0.28	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	159.48	15	\$347.21	0%	0%	\$225.46	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	120.40	2	\$10.74	4%	25%	\$68.49	0.14	0.19	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	3.76	15	\$508.61	2%	13%	\$9,999.00	8.76	8.81	RFG_HECOMP-Refrigeration-AEO15-4
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	66.05	15	\$5,552.98	2%	13%	\$8,706.52	12.81	12.88	RFG_HECOMP-Refrigeration-AEO15-4

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Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	500.89	15	\$305.13	4%	25%	\$63.08	7.77	7.81	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	2,005.92	15	\$539.09	2%	13%	\$27.83	11.67	11.74	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,214.48	10	\$449.00	0%	0%	\$14.33	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	220.67	16	\$153.90	4%	25%	\$69.32	1.49	1.49	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	79.36	15	\$135.00	2%	13%	\$175.43	0.07	0.07	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	841.89	16	\$105.92	4%	25%	\$13.22	0.71	0.74	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	648.09	10	\$521.11	4%	25%	\$113.82	0.55	0.57	RFG_DDEF-Refrigeration-VTTRM-1
Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	386.13	8	\$18,135.52	4%	25%	\$9,999.00	0.02	0.02	RFG_ADC-Refrigeration-PGE-R6-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	853.85	12	\$605.15	4%	25%	\$84.24	9.93	9.99	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	43.84	8	\$15.90	0%	0%	\$56.26	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.52	8	\$3.87	0%	0%	\$132.85	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	15.89	5	\$49.37	0%	0%	\$702.93	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,398.22	5	\$288.64	25%	75%	\$46.83	9.44	9.26	VEND_CTRL-Miscellaneous-SCE-17R0-46
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	6,989.94	18	\$8,815.42	25%	50%	\$112.84	42.05	41.17	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	319.00	15	\$335.00	0%	0%	\$63.30	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	225.23	15	\$335.00	0%	0%	\$63.30	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	16.21	4	\$37.32	10%	50%	\$566.42	9.83	8.41	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.51	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.51	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.51	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$82.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	16,968.8	18	\$4,231.40	0%	0%	\$22.31	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$3,956.64	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	293.72	7	\$423.28	0%	0%	\$235.63	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	4.82	7	\$423.28	0%	0%	\$235.63	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	4.82	7	\$423.28	0%	0%	\$235.63	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	46,148.75	15	\$1,114.41	0%	0%	\$2.39	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	252.85	15	\$1,114.41	0%	0%	\$2.39	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	8,763.22	6	\$37.07	1%	3%	\$0.78	3.26	3.14	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.03	20	\$0.26	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.30	25	\$4.24	0%	0%	\$68.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.84	25	\$4.24	0%	0%	\$68.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.24	0%	0%	\$68.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$68.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.52	25	\$4.24	0%	0%	\$68.65	0.00	0.00	ADVNC-AII-RSRCH-1

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Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$68.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.24	3	\$0.18	0%	3%	\$67.17	4.25	4.19	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.18	0%	3%	\$67.17	1.74	1.66	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.18	0%	3%	\$67.17	2.47	2.40	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.18	0%	3%	\$67.17	0.49	0.48	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.25	3	\$0.18	0%	3%	\$67.17	4.37	4.53	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.18	0%	3%	\$67.17	0.81	0.86	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.18	0%	3%	\$67.17	0.56	0.51	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.18	0%	3%	\$67.17	0.48	0.41	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	Existing	0.33	3	\$1.02	0%	0%	\$301.12	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	Existing	0.25	3	\$1.02	0%	0%	\$301.12	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Ventilation	Commissioning	sqft	Existing	0.18	3	\$1.02	0%	0%	\$301.12	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$1.02	0%	0%	\$301.12	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.29	3	\$1.02	0%	0%	\$301.12	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$1.02	0%	0%	\$301.12	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$1.02	0%	0%	\$301.12	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.33	3	\$0.32	10%	65%	\$95.59	107.88	106.43	COM_RCX-HVAC-AEG-1

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Large Retail	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.32	10%	65%	\$95.59	44.29	42.19	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.32	10%	65%	\$95.59	62.81	61.03	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.32	10%	65%	\$95.59	4.19	4.07	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.29	3	\$0.32	10%	65%	\$95.59	92.43	95.93	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.32	10%	65%	\$95.59	17.14	18.24	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.32	10%	65%	\$95.59	23.88	21.53	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.21	10	\$0.09	0%	0%	\$59.69	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.19	10	\$1.12	0%	0%	\$730.30	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.24	0%	0%	\$1,601.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.09	10	\$3.24	0%	0%	\$4,330.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$4,699.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	Existing	140.31	16	\$75.53	20%	75%	\$50.23	0.73	0.69	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	13,160.22	25	\$21,593.86	0%	0%	\$127.41	0.00	0.00	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$80.48	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	0.67	45	\$0.84	15%	50%	\$80.48	10.74	10.48	Building Energy Simulation Tool

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Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$80.48	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.35	20	\$0.86	15%	25%	\$205.41	4.66	4.55	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$205.41	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$205.41	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.27	20	\$0.81	45%	50%	\$9,999.00	1.20	1.17	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.19	20	\$0.81	45%	50%	\$9,999.00	-0.42	-0.41	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.16	20	\$0.81	45%	50%	\$9,999.00	-0.75	-0.73	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.04	45	\$1.70	15%	50%	\$124.49	-1.07	-1.04	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.50	45	\$1.70	15%	50%	\$124.49	7.79	7.61	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.42	45	\$1.70	15%	50%	\$124.49	13.80	13.47	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	13.46	18	\$0.59	15%	25%	\$1.83	1.38	1.35	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	8.01	18	\$0.59	15%	25%	\$1.83	0.43	0.41	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.74	18	\$0.59	15%	25%	\$1.83	0.75	0.73	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	9.07	30	\$37.07	66%	66%	\$95.86	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	12.40	30	\$37.07	66%	66%	\$95.86	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.02	30	\$37.07	66%	66%	\$95.86	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,196.54	10	\$914.46	15%	75%	\$35.97	0.11	0.10	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	325.03	15	\$248.07	15%	75%	\$73.88	1.85	1.77	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	758.90	15	\$263.92	15%	75%	\$33.66	0.43	0.41	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	20.85	15	\$248.07	15%	75%	\$1,151.83	0.05	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	22,307.67	10	\$1,796.53	15%	75%	\$10.13	0.28	0.27	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	120.98	5	\$267.96	18%	75%	\$483.61	13.57	12.92	AEG-BEST
Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.46	15	\$0.05	10%	15%	\$10.83	3.65	3.50	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.99	14	\$5.25	6%	75%	\$535.00	12.64	12.06	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.50	18	\$0.26	15%	20%	\$44.92	6.98	6.81	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,807.24	15	\$189.00	19%	25%	\$10.12	2.33	2.22	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	651.24	15	\$1,273.23	19%	50%	\$189.16	4.62	4.41	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.04	19%	50%	\$11.43	16.23	15.50	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	15%	43%	\$748.90	1.45	1.38	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.66	15	\$0.76	5%	14%	\$60.57	5.10	4.87	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	5%	14%	\$60.57	9.05	8.64	HVAC_DOAS-Heating-7PLN-v5-1

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Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	5,029.70	15	\$7,501.21	15%	30%	\$146.04	10.34	9.92	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.13	15	\$7,501.21	15%	30%	\$146.04	0.00	0.00	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	New	7.15	3	\$33.20	15%	45%	\$1,585.57	0.27	0.26	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	New	184.80	15	\$410.87	15%	45%	\$217.88	46.19	44.80	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	176.37	15	\$698.92	15%	75%	\$388.34	103.30	100.86	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	236.20	20	\$979.24	15%	25%	\$200.91	0.70	0.67	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	168.91	20	\$979.24	15%	25%	\$200.91	5.68	5.44	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.64	5	\$0.75	30%	40%	\$115.98	5.26	5.07	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	30%	40%	\$115.98	1.78	1.71	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$115.98	3.16	3.03	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	91.39	10	\$8.63	25%	65%	\$11.87	0.95	0.90	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	100.42	10	\$17.56	25%	65%	\$21.98	0.52	0.49	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	24.88	10	\$16.82	25%	65%	\$84.99	0.15	0.14	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	0%	0%	\$7.33	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,055.02	15	\$15.38	1%	75%	\$1.41	4.12	3.93	AEG-BEST

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Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	374.56	4	\$75.87	25%	40%	\$52.92	0.84	0.79	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	0.38	0.35	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.37	5.85	5.60	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.67	15	\$0.36	11%	23%	\$52.51	61.94	60.80	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.94	15	\$0.60	11%	23%	\$61.88	86.72	85.12	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	539.33	15	\$56.14	1%	3%	\$10.69	0.71	0.70	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.63	15	\$65.99	1%	3%	\$126.36	0.03	0.03	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,551.84	11	\$26.48	15%	30%	\$0.69	9.95	9.58	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	466.10	16	\$1,864.95	5%	15%	\$375.24	8.16	7.89	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.27	9	\$0.65	15%	25%	\$42.08	5.28	5.27	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	80.59	8	\$56.85	15%	25%	\$113.71	2.60	2.59	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	100.77	7	\$3,486.31	15%	30%	\$6,181.62	4.41	4.40	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	92.47	12	\$50.74	4%	25%	\$60.96	0.51	0.48	RFG_ASH-Refrigeration-7PLN-v6-1

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Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	21.11	4	\$24.51	4%	25%	\$302.78	0.03	0.03	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	151.75	15	\$347.21	0%	0%	\$225.79	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	101.01	2	\$10.74	4%	25%	\$78.30	0.01	0.01	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	3.58	15	\$508.61	2%	13%	\$9,999.00	2.30	2.24	RFG_HECOMP-Refrigeration-AEO17-3
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	62.85	15	\$5,552.98	2%	13%	\$8,719.46	3.36	3.28	RFG_HECOMP-Refrigeration-AEO17-5
Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	476.62	15	\$305.13	4%	25%	\$63.18	2.04	1.99	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,908.73	15	\$539.09	2%	13%	\$27.87	3.06	2.99	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	4,010.27	10	\$449.00	0%	0%	\$14.35	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	209.17	16	\$153.90	4%	25%	\$69.83	0.40	0.39	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	75.22	15	\$135.00	2%	13%	\$176.72	0.02	0.02	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	762.45	16	\$105.92	4%	25%	\$13.93	0.21	0.19	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	586.94	10	\$521.11	4%	25%	\$119.96	0.12	0.11	RFG_DDEF-Refrigeration-VTTRM-1

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Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	11.57	8	\$647.70	4%	25%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	812.48	12	\$5,648.09	4%	25%	\$787.37	2.33	2.27	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	41.66	8	\$15.90	0%	0%	\$56.49	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.29	8	\$3.87	0%	0%	\$133.40	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	14.90	5	\$49.37	0%	0%	\$714.81	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,305.46	5	\$288.64	25%	75%	\$47.70	1.12	1.06	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	5,903.49	18	\$8,815.42	25%	50%	\$130.71	16.59	16.18	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	232.13	15	\$335.00	0%	0%	\$82.34	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	161.72	15	\$335.00	0%	0%	\$82.34	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	16.00	4	\$37.32	10%	50%	\$572.71	0.98	0.84	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.31	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.31	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.31	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$58.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	14,331.40	18	\$4,231.40	0%	0%	\$25.84	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$3,768.16	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	280.74	7	\$423.28	0%	0%	\$239.44	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	4.61	7	\$423.28	0%	0%	\$239.44	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	4.61	7	\$423.28	0%	0%	\$239.44	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	44,109.60	15	\$1,114.41	0%	0%	\$2.43	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	233.99	15	\$1,114.41	0%	0%	\$2.43	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,921.07	6	\$37.07	1%	3%	\$2.35	0.64	0.62	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.03	20	\$0.24	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	1.29	25	\$4.24	10%	30%	\$66.62	52.73	51.64	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	New	0.84	25	\$4.24	10%	30%	\$66.62	17.86	17.46	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.71	25	\$4.24	10%	30%	\$66.62	31.62	30.91	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$66.62	7.20	7.04	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.54	25	\$4.24	10%	30%	\$66.62	253.53	250.75	ADVNC-AII-RSRCH-1
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	30%	\$66.62	34.89	34.70	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.20	3	\$0.13	0%	3%	\$55.63	0.29	0.27	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	New	0.13	3	\$0.13	0%	3%	\$55.63	0.10	0.09	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.13	0%	3%	\$55.63	0.17	0.16	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.13	0%	3%	\$55.63	0.04	0.04	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.24	3	\$0.13	0%	3%	\$55.63	0.35	0.34	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.13	0%	3%	\$55.63	0.06	0.06	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.13	0%	3%	\$55.63	0.04	0.04	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.13	0%	3%	\$55.63	0.04	0.03	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	New	0.28	3	\$0.72	10%	65%	\$244.67	46.66	45.33	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	New	0.18	3	\$0.72	10%	65%	\$244.67	15.80	15.31	COM_CX-HVAC-AEG-1

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Large Retail	Ventilation	Commissioning	sqft	New	0.15	3	\$0.72	10%	65%	\$244.67	27.97	27.10	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.72	10%	65%	\$244.67	2.12	2.06	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	New	0.27	3	\$0.72	10%	65%	\$244.67	186.94	184.52	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.72	10%	65%	\$244.67	25.72	25.61	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.72	10%	65%	\$244.67	38.77	36.32	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	New	0.28	3	\$0.23	0%	0%	\$77.67	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Heating	Retrocommissioning	sqft	New	0.18	3	\$0.23	0%	0%	\$77.67	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.23	0%	0%	\$77.67	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.23	0%	0%	\$77.67	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.27	3	\$0.23	0%	0%	\$77.67	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.23	0%	0%	\$77.67	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.23	0%	0%	\$77.67	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.19	10	\$0.09	0%	0%	\$61.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.18	10	\$1.12	0%	0%	\$748.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.05	3	\$0.24	0%	0%	\$1,642.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.09	10	\$3.24	0%	0%	\$4,439.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$4,817.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	New	140.31	16	\$75.53	20%	75%	\$50.23	0.16	0.15	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	14,369.82	25	\$21,940.59	0%	0%	\$115.24	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.26	45	\$0.84	15%	35%	\$82.77	133.60	133.30	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$0.84	15%	35%	\$82.77	67.60	67.38	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$82.77	28.94	28.26	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.55	20	\$0.86	15%	50%	\$136.33	122.84	122.56	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$136.33	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$136.33	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.60	20	\$0.81	45%	50%	\$243.20	75.95	75.78	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$243.20	-11.27	-11.23	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$243.20	-8.51	-8.31	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.12	45	\$1.70	15%	35%	\$59.23	-18.67	-18.63	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.65	45	\$1.70	15%	35%	\$59.23	90.13	89.84	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.39	45	\$1.70	15%	35%	\$59.23	68.05	66.45	Building Energy Simulation Tool

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Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	7.45	18	\$0.59	15%	50%	\$32.47	26.52	26.46	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.65	18	\$0.59	15%	50%	\$32.47	-5.91	-5.89	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.10	18	\$0.59	15%	50%	\$32.47	-4.46	-4.36	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	11.20	30	\$37.07	48%	48%	\$82.22	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	19.48	30	\$37.07	48%	48%	\$82.22	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.66	30	\$37.07	48%	48%	\$82.22	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	158.82	5	\$267.96	18%	75%	\$373.38	561.78	549.26	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.60	15	\$0.05	5%	15%	\$8.62	163.81	163.86	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.64	14	\$5.25	3%	75%	\$337.95	267.04	266.64	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.24	18	\$0.26	15%	20%	\$97.12	34.11	33.31	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	714.59	15	\$189.00	13%	25%	\$26.05	41.57	40.21	VENT_PMSM-Ventilation-AEG-2016-2

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Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	257.50	15	\$1,273.23	13%	25%	\$487.08	14.98	14.49	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.14	15	\$0.04	13%	25%	\$29.42	52.64	50.92	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	1%	33%	\$1,619.15	13.82	13.37	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.11	15	\$0.76	0%	11%	\$47.09	114.66	114.49	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.51	15	\$0.76	0%	11%	\$47.09	169.11	163.58	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,541.68	15	\$7,501.21	15%	15%	\$44.50	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,533.88	15	\$7,501.21	15%	15%	\$44.50	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	21.82	21.32	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	244.66	15	\$410.87	15%	45%	\$166.76	565.70	555.38	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	233.50	15	\$698.92	15%	75%	\$297.24	1,045.52	1,029.18	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	336.68	20	\$979.24	15%	75%	\$126.30	50.48	52.94	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	341.27	20	\$979.24	15%	75%	\$126.30	246.95	235.67	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.83	5	\$0.75	30%	40%	\$100.59	211.22	210.75	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.69	5	\$0.75	30%	40%	\$100.59	62.67	62.46	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.16	5	\$0.75	30%	40%	\$100.59	47.31	46.20	STAT_WIFI-AII-7PLN-v2-1

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Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	38.15	10	\$8.63	25%	65%	\$29.27	23.53	22.90	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	41.92	10	\$17.56	25%	65%	\$54.20	12.93	12.58	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	10.39	10	\$16.82	25%	65%	\$209.57	3.16	3.08	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	0%	0%	\$7.21	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	146.73	15	\$15.38	16%	75%	\$10.45	55.11	53.61	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	156.36	4	\$75.87	25%	40%	\$130.49	35.72	34.74	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	29.97	29.15	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.46	95.45	92.85	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.47	15	\$0.36	3%	23%	\$77.75	368.46	368.94	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.66	15	\$0.60	3%	23%	\$91.63	515.85	516.52	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	171.15	15	\$56.14	1%	3%	\$35.22	10.20	10.69	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.04	15	\$65.99	1%	3%	\$133.57	0.55	0.57	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,244.86	11	\$26.48	15%	30%	\$1.01	143.47	144.07	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	332.27	16	\$1,864.95	5%	15%	\$552.90	97.94	98.35	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.47	9	\$0.65	15%	25%	\$40.50	131.86	140.32	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	87.76	8	\$56.85	15%	25%	\$109.43	70.08	74.58	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	109.74	7	\$3,486.31	15%	30%	\$5,948.95	131.45	139.88	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	8.95	12	\$50.74	4%	25%	\$656.79	0.59	0.57	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	2.30	4	\$24.51	4%	25%	\$2,799.28	0.19	0.18	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	12.50	15	\$347.21	0%	0%	\$2,949.96	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	10.78	2	\$10.74	4%	25%	\$718.84	0.29	0.36	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.29	15	\$508.61	2%	13%	\$9,999.00	3.11	3.18	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.18	15	\$5,552.98	2%	13%	\$9,999.00	4.55	4.66	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	39.26	15	\$305.13	4%	25%	\$825.40	2.76	2.82	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	157.21	15	\$539.09	2%	13%	\$364.15	4.14	4.24	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	330.30	10	\$449.00	0%	0%	\$187.48	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	20.02	16	\$153.90	4%	25%	\$812.85	0.43	0.45	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	7.20	15	\$135.00	2%	13%	\$2,057.03	0.02	0.02	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	71.86	16	\$105.92	4%	25%	\$141.72	1.20	1.19	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	55.32	10	\$521.11	4%	25%	\$1,220.38	0.92	0.92	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	34.58	8	\$18,135.52	4%	25%	\$9,999.00	0.03	0.04	RFG_ADC-Refrigeration-PGE-R6-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	66.92	12	\$605.15	4%	25%	\$1,102.16	3.53	3.61	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	3.99	8	\$15.90	0%	0%	\$615.72	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.41	8	\$3.87	0%	0%	\$1,453.89	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	1.45	5	\$49.37	0%	0%	\$7,693.39	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,455.68	5	\$288.64	25%	75%	\$44.67	4.61	4.48	VEND_CTRL-Miscellaneous-SCE-17R0-47
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,780.06	18	\$8,815.42	25%	50%	\$282.60	81.06	79.15	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	326.81	15	\$335.00	0%	0%	\$53.12	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	316.91	15	\$335.00	0%	0%	\$53.12	0.00	0.00	AEG - BEST

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Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	10.17	4	\$37.32	10%	50%	\$855.55	32.73	26.11	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$2.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$36.73	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,012.34	18	\$4,231.40	0%	0%	\$372.51	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$4,454.59	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	39.06	7	\$423.28	0%	0%	\$1,829.31	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$1,829.31	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$1,829.31	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	6,137.87	15	\$1,114.41	0%	0%	\$18.09	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$18.09	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,025.74	6	\$37.07	1%	3%	\$6.70	12.24	11.82	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.18	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.26	25	\$4.24	0%	0%	\$86.21	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.88	25	\$4.24	0%	0%	\$86.21	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.24	0%	0%	\$86.21	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$86.21	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.00	25	\$4.24	0%	0%	\$86.21	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$86.21	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.26	3	\$0.13	0%	3%	\$57.40	21.30	21.30	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.22	3	\$0.13	0%	3%	\$57.40	6.32	6.31	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.13	0%	3%	\$57.40	4.77	4.61	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.13	0%	3%	\$57.40	2.14	2.08	COM_SEM-Water Heating-AEG-1

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Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.17	3	\$0.13	0%	3%	\$57.40	13.89	14.41	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.13	0%	3%	\$57.40	3.90	4.15	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.13	0%	3%	\$57.40	0.32	0.18	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.13	0%	3%	\$57.40	1.61	1.28	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	Existing	0.36	3	\$0.79	0%	0%	\$283.81	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	Existing	0.30	3	\$0.79	0%	0%	\$283.81	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.79	0%	0%	\$283.81	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.79	0%	0%	\$283.81	0.00	0.00	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.19	3	\$0.79	0%	0%	\$283.81	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.79	0%	0%	\$283.81	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.79	0%	0%	\$283.81	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.36	3	\$0.25	10%	65%	\$90.09	540.58	540.75	COM_RCX-HVAC-AEG-1
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.25	10%	65%	\$90.09	160.38	160.14	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.25	10%	65%	\$90.09	121.08	117.13	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.25	10%	65%	\$90.09	18.10	17.61	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.19	3	\$0.25	10%	65%	\$90.09	293.73	304.86	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.25	10%	65%	\$90.09	82.55	87.84	COM_RCX-Lighting-AEG-1

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Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.25	10%	65%	\$90.09	13.59	7.78	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.14	10	\$0.09	0%	0%	\$90.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$8,037.30	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	Existing	140.31	16	\$75.53	20%	75%	\$50.23	23.28	22.06	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,813.87	25	\$2,976.28	0%	0%	\$127.41	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$227.00	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.24	45	\$0.84	15%	50%	\$227.00	37.08	36.23	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$227.00	2.34	2.28	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.71	20	\$0.86	15%	50%	\$87.35	77.99	76.26	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.09	20	\$0.86	15%	50%	\$87.35	3.56	3.48	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.03	20	\$0.86	15%	50%	\$87.35	3.58	3.49	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.16	20	\$0.81	45%	50%	\$963.39	9.81	9.59	Building Energy Simulation Tool

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Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$963.39	-1.45	-1.42	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$963.39	-1.46	-1.42	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$376.17	-0.41	-0.41	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.22	45	\$1.70	15%	50%	\$376.17	10.52	10.28	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.07	45	\$1.70	15%	50%	\$376.17	10.55	10.30	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	5.91	18	\$0.59	15%	50%	\$2.64	10.08	9.85	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	10.39	18	\$0.59	15%	50%	\$2.64	6.34	6.19	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.38	18	\$0.59	15%	50%	\$2.64	6.36	6.20	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	8.33	30	\$37.07	66%	66%	\$115.07	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	12.37	30	\$37.07	66%	66%	\$115.07	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.32	30	\$37.07	66%	66%	\$115.07	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	HVAC - Economizer	HP cool	New	116.28	5	\$267.96	18%	75%	\$503.25	52.12	49.60	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.44	15	\$0.05	10%	15%	\$11.19	16.81	16.13	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.04	14	\$5.25	6%	75%	\$513.40	43.63	41.78	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.26	15%	20%	\$110.59	13.66	13.32	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	660.69	15	\$189.00	19%	25%	\$27.68	4.55	4.34	VENT_PMSM-Ventilation-AEG-2016-2
Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	238.08	15	\$1,273.23	19%	25%	\$517.46	1.64	1.57	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.12	15	\$0.04	19%	25%	\$31.26	5.76	5.50	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	1%	33%	\$1,843.58	3.18	3.04	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.69	15	\$0.76	0%	11%	\$80.67	19.81	18.98	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.23	15	\$0.76	0%	11%	\$80.67	19.91	19.02	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,868.34	15	\$7,501.21	15%	15%	\$63.48	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	6,689.09	15	\$7,501.21	15%	15%	\$63.48	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	New	6.29	3	\$33.20	15%	45%	\$1,802.33	0.98	0.93	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	New	176.93	15	\$410.87	15%	45%	\$227.57	180.78	175.36	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	168.85	15	\$698.92	15%	75%	\$405.62	404.34	394.77	RTU_PREC-Cooling-XCELCO-2017-18-1

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Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	238.52	20	\$979.24	15%	75%	\$175.32	13.92	13.35	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	225.73	20	\$979.24	15%	75%	\$175.32	53.52	51.34	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.62	5	\$0.75	30%	40%	\$136.66	24.25	23.36	STAT_WIFI-All-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.44	5	\$0.75	30%	40%	\$136.66	6.15	5.92	STAT_WIFI-All-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	30%	40%	\$136.66	6.17	5.92	STAT_WIFI-All-7PLN-v2-1
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	36.47	10	\$8.63	25%	65%	\$29.75	4.10	3.89	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	40.07	10	\$17.56	25%	65%	\$55.09	2.25	2.14	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	9.93	10	\$16.82	25%	65%	\$213.01	0.66	0.63	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	0%	0%	\$7.33	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	140.24	15	\$15.38	1%	75%	\$10.62	17.78	16.98	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	149.45	4	\$75.87	25%	40%	\$132.63	3.63	3.42	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	1.62	1.52	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.24	25.31	24.19	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.44	15	\$0.36	11%	23%	\$79.55	196.86	193.23	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.62	15	\$0.60	11%	23%	\$93.76	275.60	270.52	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	160.18	15	\$56.14	1%	3%	\$35.99	2.25	2.21	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.63	15	\$65.99	1%	3%	\$126.36	0.12	0.12	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,004.21	11	\$26.48	15%	30%	\$1.04	31.61	30.44	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	307.63	16	\$1,864.95	5%	15%	\$568.55	25.94	25.07	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.27	9	\$0.65	15%	25%	\$42.08	25.45	25.35	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	80.59	8	\$56.85	15%	25%	\$113.71	12.50	12.46	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	100.77	7	\$3,486.31	15%	30%	\$6,181.62	21.22	21.16	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	8.47	12	\$50.74	4%	25%	\$665.16	0.13	0.12	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	2.17	4	\$24.51	4%	25%	\$2,854.24	0.02	0.02	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.95	15	\$347.21	0%	0%	\$2,986.72	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	8.43	2	\$10.74	4%	25%	\$886.62	0.01	0.02	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.28	15	\$508.61	2%	13%	\$9,999.00	0.79	0.78	RFG_HECOMP-Refrigeration-AEO17-3
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.95	15	\$5,552.98	2%	13%	\$9,999.00	1.15	1.15	RFG_HECOMP-Refrigeration-AEO17-5

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Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	37.53	15	\$305.13	4%	25%	\$835.69	0.70	0.70	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	150.29	15	\$539.09	2%	13%	\$368.68	1.05	1.04	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	315.75	10	\$449.00	0%	0%	\$189.81	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	18.97	16	\$153.90	4%	25%	\$834.38	0.11	0.12	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	6.82	15	\$135.00	2%	13%	\$2,111.50	0.01	0.01	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	66.62	16	\$105.92	4%	25%	\$147.67	0.37	0.34	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	51.28	10	\$521.11	4%	25%	\$1,271.59	0.22	0.20	RFG_DDEF-Refrigeration-VTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	0.97	8	\$647.70	4%	25%	\$9,999.00	0.01	0.01	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	63.97	12	\$5,648.09	4%	25%	\$9,999.00	0.79	0.78	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	3.82	8	\$15.90	0%	0%	\$616.45	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.39	8	\$3.87	0%	0%	\$1,455.62	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1.37	5	\$49.37	0%	0%	\$7,799.79	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,376.33	5	\$288.64	25%	75%	\$45.24	0.43	0.41	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,398.27	18	\$8,815.42	25%	50%	\$321.77	32.45	31.64	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	234.42	15	\$335.00	0%	0%	\$72.27	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	214.33	15	\$335.00	0%	0%	\$72.27	0.00	0.00	AEG - BEST
Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	9.97	4	\$37.32	10%	50%	\$889.55	3.12	2.53	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.87	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.87	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.87	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$21.11	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	873.31	18	\$4,231.40	0%	0%	\$424.15	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$4,223.67	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	37.34	7	\$423.28	0%	0%	\$1,859.31	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$1,859.31	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$1,859.31	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	5,866.66	15	\$1,114.41	0%	0%	\$18.39	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$18.39	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,025.74	6	\$37.07	1%	3%	\$6.70	2.40	2.31	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.16	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	1.24	25	\$4.24	10%	25%	\$83.04	182.20	178.44	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	New	0.88	25	\$4.24	10%	25%	\$83.04	46.24	45.26	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$83.04	46.38	45.35	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$83.04	23.35	22.83	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.01	25	\$4.24	10%	25%	\$83.04	604.30	597.67	ADVNC-AII-RSRCH-1

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Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$83.04	125.99	125.33	ADVNC-AII-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.19	3	\$0.08	0%	3%	\$43.72	1.33	1.27	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	New	0.14	3	\$0.08	0%	3%	\$43.72	0.34	0.32	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.08	0%	3%	\$43.72	0.34	0.32	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.08	0%	3%	\$43.72	0.17	0.16	COM_SEM-Water Heating-AEG-1
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.16	3	\$0.08	0%	3%	\$43.72	1.11	1.09	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.08	0%	3%	\$43.72	0.31	0.31	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.08	0%	3%	\$43.72	0.02	0.01	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.08	0%	3%	\$43.72	0.12	0.10	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	New	0.27	3	\$0.47	10%	65%	\$211.83	214.94	208.88	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	New	0.19	3	\$0.47	10%	65%	\$211.83	54.55	52.95	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	New	0.06	3	\$0.47	10%	65%	\$211.83	54.72	53.00	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.47	10%	65%	\$211.83	9.18	8.89	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	New	0.18	3	\$0.47	10%	65%	\$211.83	594.09	586.42	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.47	10%	65%	\$211.83	123.86	123.32	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.47	10%	65%	\$211.83	4.15	3.30	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	New	0.27	3	\$0.15	0%	0%	\$67.24	0.00	0.00	COM_RCX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Heating	Retrocommissioning	sqft	New	0.19	3	\$0.15	0%	0%	\$67.24	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.15	0%	0%	\$67.24	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.15	0%	0%	\$67.24	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.18	3	\$0.15	0%	0%	\$67.24	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.15	0%	0%	\$67.24	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.15	0%	0%	\$67.24	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.13	10	\$0.09	0%	0%	\$92.43	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$9,354.99	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	New	140.31	16	\$75.53	20%	75%	\$50.23	5.13	4.89	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,977.99	25	\$3,020.09	0%	0%	\$115.24	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$0.84	15%	35%	\$157.26	2.80	2.78	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.32	45	\$0.84	15%	35%	\$157.26	4.12	4.07	Building Energy Simulation Tool

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Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$157.26	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.86	15%	35%	\$1,924.91	0.66	0.66	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$1,924.91	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$1,924.91	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.28	20	\$0.81	45%	50%	\$9,999.00	4.79	4.75	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.19	20	\$0.81	45%	50%	\$9,999.00	-0.61	-0.61	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.81	45%	50%	\$9,999.00	-1.92	-1.87	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.48	45	\$1.70	15%	35%	\$288.62	-19.88	-19.70	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.58	45	\$1.70	15%	35%	\$288.62	4.49	4.44	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.29	45	\$1.70	15%	35%	\$288.62	14.10	13.70	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.95	18	\$0.59	15%	50%	\$9,999.00	-2.71	-2.68	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.26	18	\$0.59	15%	50%	\$9,999.00	-0.81	-0.80	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.16	18	\$0.59	15%	50%	\$9,999.00	-2.55	-2.48	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.80	30	\$37.07	48%	48%	\$137.80	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.22	30	\$37.07	48%	48%	\$137.80	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.68	30	\$37.07	48%	48%	\$137.80	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	136.85	5	\$267.96	18%	75%	\$433.34	103.48	101.18	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.75	15	\$0.05	5%	15%	\$6.82	27.69	27.42	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.46	14	\$5.25	3%	75%	\$1,197.06	16.26	16.04	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.43	18	\$0.26	15%	20%	\$53.06	8.64	8.39	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	309.21	15	\$189.00	13%	25%	\$59.76	10.52	10.09	VENT_PMSM-Ventilation-AEG-2016-2
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	111.43	15	\$1,273.23	13%	50%	\$1,117.27	11.92	11.43	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.26	15	\$0.18	13%	50%	\$67.49	41.89	40.18	FAN_VSD-Ventilation-MIDATL-v3.0-13
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	10%	44%	\$884.64	3.73	3.58	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.95	15	\$0.76	3%	15%	\$40.18	7.44	7.34	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.93	15	\$0.76	3%	15%	\$40.18	45.62	43.75	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	8,201.81	15	\$7,501.21	15%	15%	\$43.87	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,978.27	15	\$7,501.21	15%	15%	\$43.87	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	4.67	4.56	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	Existing	210.81	15	\$410.87	15%	45%	\$193.54	104.21	102.30	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	201.19	15	\$698.92	15%	75%	\$344.97	192.59	189.58	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	308.16	20	\$685.47	15%	75%	\$122.05	10.25	10.75	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	189.34	20	\$685.47	15%	75%	\$122.05	1.55	1.47	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.04	5	\$0.75	30%	40%	\$87.10	35.70	35.39	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$87.10	3.82	3.77	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.30	5	\$0.75	30%	40%	\$87.10	11.98	11.63	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	132.66	10	\$8.63	25%	65%	\$8.42	28.79	28.01	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	145.77	10	\$17.56	25%	65%	\$15.59	15.82	15.39	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	36.12	10	\$16.82	25%	65%	\$60.27	3.87	3.76	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	0%	0%	\$7.21	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	510.49	15	\$15.38	16%	75%	\$3.00	67.46	65.62	AEG-BEST

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Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	543.72	4	\$75.87	25%	40%	\$37.53	43.70	42.50	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	36.67	35.67	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,694.00	116.74	113.55	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.69	15	\$0.36	3%	23%	\$54.19	71.62	72.82	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.96	15	\$0.60	3%	23%	\$63.87	100.26	101.95	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	112.52	15	\$56.14	1%	3%	\$55.60	2.38	2.59	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.99	15	\$65.99	1%	3%	\$138.76	0.09	0.10	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,057.02	11	\$26.48	15%	30%	\$1.08	18.56	18.68	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	313.03	16	\$1,864.95	5%	15%	\$587.29	12.67	12.75	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.66	9	\$0.65	15%	25%	\$57.44	47.39	48.79	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	94.35	8	\$56.85	15%	25%	\$96.65	25.19	25.93	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	117.98	7	\$3,486.31	15%	30%	\$5,254.26	47.24	48.63	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	111.61	12	\$50.74	11%	75%	\$52.65	8.08	7.85	RFG_ASH-Refrigeration-7PLN-v6-1

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Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	87.76	4	\$24.51	5%	35%	\$111.46	8.96	13.64	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	128.56	15	\$347.21	0%	0%	\$322.00	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	148.71	2	\$10.74	11%	75%	\$54.86	78.79	125.05	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	3.03	15	\$508.61	6%	38%	\$9,999.00	208.32	238.53	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	53.24	15	\$5,552.98	6%	38%	\$9,999.00	304.69	348.89	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	403.78	15	\$305.13	11%	75%	\$90.10	184.86	211.67	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,617.03	15	\$539.09	6%	38%	\$39.75	277.61	317.88	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	3,397.41	10	\$449.00	0%	0%	\$20.46	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	294.98	16	\$153.90	11%	75%	\$70.38	23.32	32.50	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	106.08	15	\$135.00	6%	38%	\$178.11	1.05	1.46	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,525.28	16	\$105.92	11%	75%	\$5.97	170.34	259.44	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,943.99	10	\$521.11	11%	75%	\$51.40	131.13	199.72	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	476.92	8	\$18,135.52	5%	35%	\$8,728.14	4.21	6.68	RFG_ADC-Refrigeration-PGE-R6-1

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Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	688.31	12	\$605.15	5%	35%	\$120.31	110.29	126.29	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	49.80	8	\$15.90	0%	0%	\$49.36	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	5.13	8	\$3.87	0%	0%	\$116.55	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	18.04	5	\$49.37	0%	0%	\$616.73	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,381.08	5	\$288.64	25%	75%	\$47.41	115.54	113.42	VEND_CTRL-Miscellaneous-SCE-17R0-44
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,050.47	18	\$8,815.42	25%	50%	\$154.40	20.52	19.93	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	427.33	15	\$335.00	0%	0%	\$56.15	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	198.02	15	\$335.00	0%	0%	\$56.15	0.00	0.00	AEG - BEST
Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	24.16	4	\$37.32	10%	50%	\$349.29	11.28	8.67	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.01	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$3.62	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.62	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$3.62	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$21.68	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	674.33	18	\$4,231.40	0%	0%	\$555.07	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.04	10	\$1.85	0%	0%	\$5,851.22	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	135.84	7	\$423.28	0%	0%	\$526.07	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$526.07	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$526.07	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	21,343.23	15	\$1,114.41	0%	0%	\$5.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$5.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,501.03	6	\$37.07	1%	3%	\$4.58	6.72	6.49	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.08	20	\$0.78	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	1.55	25	\$4.24	0%	0%	\$43.00	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.08	25	\$4.24	0%	0%	\$43.00	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.54	25	\$4.24	0%	0%	\$43.00	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	2.18	25	\$4.24	0%	0%	\$43.00	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.82	25	\$4.24	0%	0%	\$43.00	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.24	0%	0%	\$43.00	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.32	3	\$0.66	0%	0%	\$133.33	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.66	0%	0%	\$133.33	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.66	0%	0%	\$133.33	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.36	3	\$0.66	0%	0%	\$133.33	0.00	0.00	COM_SEM-Water Heating-AEG-1
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.30	3	\$0.66	0%	0%	\$133.33	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.66	0%	0%	\$133.33	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.40	3	\$0.66	0%	0%	\$133.33	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.66	0%	0%	\$133.33	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	Existing	0.45	3	\$1.75	0%	0%	\$269.95	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	Existing	0.25	3	\$1.75	0%	0%	\$269.95	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	Existing	0.13	3	\$1.75	0%	0%	\$269.95	0.00	0.00	COM_CX-HVAC-AEG-1

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Restaurant	Water Heating	Commissioning	sqft	Existing	0.16	3	\$1.75	0%	0%	\$269.95	0.00	0.00	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.35	3	\$1.75	0%	0%	\$269.95	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.14	3	\$1.75	0%	0%	\$269.95	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.92	3	\$1.75	0%	0%	\$269.95	0.00	0.00	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.45	3	\$0.56	24%	79%	\$85.69	91.37	90.48	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.56	24%	79%	\$85.69	9.77	9.63	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.56	24%	79%	\$85.69	30.66	29.40	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.16	3	\$0.56	24%	79%	\$85.69	22.14	21.54	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.35	3	\$0.56	24%	79%	\$85.69	68.52	73.46	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.56	24%	79%	\$85.69	29.67	30.54	COM_RCX-Lighting-AEG-1
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.92	3	\$0.56	24%	79%	\$85.69	189.27	194.44	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.24	10	\$0.09	0%	0%	\$52.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	2.83	10	\$1.12	0%	0%	\$57.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.73	3	\$0.24	0%	0%	\$125.50	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	1.38	10	\$3.24	0%	0%	\$339.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.28	10	\$0.70	0%	0%	\$368.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	Existing	200.51	16	\$75.53	20%	75%	\$35.15	12.49	11.83	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,694.14	25	\$4,420.66	0%	0%	\$127.41	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$495.46	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.11	45	\$0.84	15%	50%	\$495.46	1.22	1.19	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$495.46	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.86	15%	50%	\$326.41	3.25	3.17	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$326.41	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$326.41	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.81	45%	50%	\$9,999.00	0.37	0.36	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$9,999.00	-0.06	-0.06	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.19	-0.18	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$1.70	15%	50%	\$2,291.73	-0.92	-0.90	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$1.70	15%	50%	\$2,291.73	0.33	0.32	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$1.70	15%	50%	\$2,291.73	0.98	0.96	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.33	18	\$0.59	15%	35%	\$9,999.00	0.06	0.06	Building Energy Simulation Tool

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Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-3.37	18	\$0.59	15%	35%	\$9,999.00	-0.12	-0.12	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.68	18	\$0.59	15%	35%	\$9,999.00	-0.35	-0.35	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.71	30	\$37.07	66%	66%	\$157.76	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	8.55	30	\$37.07	66%	66%	\$157.76	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.45	30	\$37.07	66%	66%	\$157.76	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	98.98	5	\$267.96	18%	75%	\$591.24	9.48	9.03	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.55	15	\$0.05	10%	15%	\$9.06	2.76	2.65	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.43	14	\$5.25	6%	75%	\$1,246.04	3.86	3.68	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.39	18	\$0.26	15%	20%	\$58.12	3.58	3.49	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	305.02	15	\$189.00	19%	25%	\$59.97	1.19	1.14	VENT_PMSM-Ventilation-AEG-2016-2

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Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	109.91	15	\$1,273.23	19%	50%	\$1,121.20	2.37	2.26	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.24	15	\$0.17	19%	50%	\$67.73	8.31	7.94	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	44%	\$968.90	0.89	0.85	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.86	15	\$0.76	3%	15%	\$57.02	1.86	1.78	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.43	15	\$0.76	3%	15%	\$57.02	5.56	5.31	HVAC_DOAS-Heating-7PLN-v5-1
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	6,009.99	15	\$7,501.21	15%	15%	\$50.94	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,326.19	15	\$7,501.21	15%	15%	\$50.94	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	New	6.21	3	\$33.20	15%	45%	\$1,824.48	0.21	0.20	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	New	150.60	15	\$410.87	15%	45%	\$267.36	32.90	31.91	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	143.73	15	\$698.92	15%	75%	\$476.54	73.58	71.84	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	221.49	20	\$685.47	15%	75%	\$138.37	2.87	2.75	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	190.26	20	\$685.47	15%	75%	\$138.37	0.51	0.49	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.76	5	\$0.75	30%	40%	\$103.34	3.98	3.83	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.55	5	\$0.75	30%	40%	\$103.34	0.54	0.52	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.27	5	\$0.75	30%	40%	\$103.34	1.62	1.55	STAT_WIFI-AII-7PLN-v2-1

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Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	126.80	10	\$8.63	25%	65%	\$8.56	5.02	4.76	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	139.33	10	\$17.56	25%	65%	\$15.84	2.76	2.61	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	34.52	10	\$16.82	25%	65%	\$61.26	0.80	0.76	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	0%	0%	\$7.33	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	487.93	15	\$15.38	1%	75%	\$3.05	21.77	20.79	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	519.69	4	\$75.87	25%	40%	\$38.14	4.44	4.18	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	1.98	1.87	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.78	30.95	29.59	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.64	15	\$0.36	11%	23%	\$56.23	37.85	37.54	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.89	15	\$0.60	11%	23%	\$66.27	52.98	52.56	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	104.30	15	\$56.14	1%	3%	\$57.43	0.52	0.52	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.47	15	\$65.99	1%	3%	\$134.16	0.02	0.02	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,830.31	11	\$26.48	15%	30%	\$1.11	4.09	3.95	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	289.82	16	\$1,864.95	5%	15%	\$604.04	3.35	3.25	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.54	9	\$0.65	15%	25%	\$59.24	9.15	8.97	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	87.50	8	\$56.85	15%	25%	\$99.68	4.49	4.41	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	109.41	7	\$3,486.31	15%	30%	\$5,418.96	7.63	7.48	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	105.73	12	\$50.74	11%	75%	\$53.32	1.76	1.68	RFG_ASH-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	74.30	4	\$24.51	5%	35%	\$127.25	0.92	1.18	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	115.05	15	\$347.21	0%	0%	\$343.18	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	122.83	2	\$10.74	11%	75%	\$65.05	4.20	5.82	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	2.71	15	\$508.61	6%	38%	\$9,999.00	53.83	54.16	RFG_HECOMP-Refrigeration-AEO17-3
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	47.65	15	\$5,552.98	6%	38%	\$9,999.00	78.73	79.21	RFG_HECOMP-Refrigeration-AEO17-5
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	361.34	15	\$305.13	11%	75%	\$96.02	47.77	48.06	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,447.08	15	\$539.09	6%	38%	\$42.36	71.73	72.17	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	3,040.34	10	\$449.00	0%	0%	\$21.81	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	250.95	16	\$153.90	11%	75%	\$80.46	6.09	6.72	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	90.25	15	\$135.00	6%	38%	\$203.61	0.27	0.30	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	2,127.54	16	\$105.92	11%	75%	\$6.88	46.14	53.14	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,637.80	10	\$521.11	11%	75%	\$59.28	27.53	32.93	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	14.07	8	\$647.70	5%	35%	\$9,999.00	0.74	0.93	RFG_ASH-Refrigeration-NMTRM-2016-1
Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	615.97	12	\$5,648.09	5%	35%	\$1,196.72	25.45	25.72	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	47.63	8	\$15.90	0%	0%	\$49.41	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.91	8	\$3.87	0%	0%	\$116.68	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	17.04	5	\$49.37	0%	0%	\$625.20	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,289.45	5	\$288.64	25%	75%	\$48.29	14.00	13.22	VEND_CTRL-Miscellaneous-SCE-17R0-41
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,564.72	18	\$8,815.42	25%	50%	\$169.11	8.50	8.29	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	310.97	15	\$335.00	0%	0%	\$65.37	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	185.13	15	\$335.00	0%	0%	\$65.37	0.00	0.00	AEG - BEST

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Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	23.59	4	\$37.32	10%	50%	\$367.95	1.06	0.83	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.37	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.37	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$3.37	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$12.36	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	609.48	18	\$4,231.40	0%	0%	\$607.95	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.04	10	\$1.71	0%	0%	\$5,501.24	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	129.84	7	\$423.28	0%	0%	\$534.70	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$534.70	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$534.70	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	20,400.15	15	\$1,114.41	0%	0%	\$5.29	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$5.29	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,501.03	6	\$37.07	1%	3%	\$4.58	1.32	1.27	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.08	20	\$0.70	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	1.54	25	\$4.24	10%	25%	\$41.46	29.92	29.30	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.10	25	\$4.24	10%	25%	\$41.46	4.09	4.00	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.55	25	\$4.24	10%	25%	\$41.46	12.14	11.87	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	2.22	25	\$4.24	10%	25%	\$41.46	28.56	27.93	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	1.80	25	\$4.24	10%	25%	\$41.46	140.27	139.71	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.72	25	\$4.24	10%	25%	\$41.46	45.31	44.88	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.24	3	\$0.53	0%	0%	\$116.41	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	New	0.17	3	\$0.53	0%	0%	\$116.41	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.53	0%	0%	\$116.41	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.34	3	\$0.53	0%	0%	\$116.41	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.28	3	\$0.53	0%	0%	\$116.41	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.53	0%	0%	\$116.41	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.35	3	\$0.53	0%	0%	\$116.41	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.53	0%	0%	\$116.41	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	New	0.33	3	\$1.33	24%	79%	\$226.01	35.29	34.29	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	New	0.24	3	\$1.33	24%	79%	\$226.01	4.82	4.67	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	New	0.12	3	\$1.33	24%	79%	\$226.01	14.33	13.88	COM_CX-HVAC-AEG-1
Restaurant	Water Heating	Commissioning	sqft	New	0.16	3	\$1.33	24%	79%	\$226.01	11.23	10.88	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	New	0.32	3	\$1.33	24%	79%	\$226.01	137.90	137.68	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.13	3	\$1.33	24%	79%	\$226.01	44.55	43.98	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	New	0.82	3	\$1.33	24%	79%	\$226.01	304.26	288.07	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	New	0.33	3	\$0.42	0%	0%	\$71.74	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	New	0.24	3	\$0.42	0%	0%	\$71.74	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.12	3	\$0.42	0%	0%	\$71.74	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.16	3	\$0.42	0%	0%	\$71.74	0.00	0.00	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.32	3	\$0.42	0%	0%	\$71.74	0.00	0.00	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.13	3	\$0.42	0%	0%	\$71.74	0.00	0.00	COM_RCX-Lighting-AEG-1

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Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.82	3	\$0.42	0%	0%	\$71.74	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.23	10	\$0.09	0%	0%	\$54.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	2.52	10	\$1.12	0%	0%	\$62.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.65	3	\$0.24	0%	0%	\$136.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	1.22	10	\$3.24	0%	0%	\$369.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.24	10	\$0.70	0%	0%	\$400.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	New	200.51	16	\$75.53	20%	75%	\$35.15	2.75	2.62	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,936.41	25	\$4,483.47	0%	0%	\$115.24	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.57	45	\$0.84	15%	35%	\$97.65	44.60	44.10	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$97.65	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$97.65	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.77	20	\$0.81	45%	50%	\$159.42	14.87	14.70	Building Energy Simulation Tool

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Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.23	20	\$0.81	45%	50%	\$159.42	-0.82	-0.81	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.81	45%	50%	\$159.42	-2.44	-2.37	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	1.36	45	\$1.70	15%	35%	\$69.94	59.47	58.81	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.18	45	\$1.70	15%	35%	\$69.94	1.48	1.46	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.08	45	\$1.70	15%	35%	\$69.94	4.40	4.27	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.98	18	\$0.59	15%	25%	\$16.61	0.39	0.38	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.15	18	\$0.59	15%	25%	\$16.61	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.07	18	\$0.59	15%	25%	\$16.61	0.01	0.01	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.08	30	\$37.07	48%	48%	\$207.70	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	6.31	30	\$37.07	48%	48%	\$207.70	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.61	30	\$37.07	48%	48%	\$207.70	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,921.61	10	\$914.46	15%	75%	\$16.74	0.33	0.32	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	656.03	15	\$248.07	15%	75%	\$36.89	4.35	4.16	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,643.29	15	\$263.92	15%	75%	\$15.67	1.09	1.04	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	50.51	15	\$248.07	15%	75%	\$475.39	0.13	0.12	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	54,572.36	10	\$1,796.53	15%	75%	\$4.14	1.00	0.95	AEG-BEST

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Grocery	Cooling	HVAC - Economizer	HP cool	Existing	238.38	5	\$267.96	18%	75%	\$248.72	126.30	123.45	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.77	15	\$0.05	5%	15%	\$6.64	32.37	31.94	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.88	14	\$5.25	3%	75%	\$189.57	19.71	19.27	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.40	18	\$0.26	15%	20%	\$56.15	9.80	9.52	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	492.52	15	\$189.00	13%	25%	\$37.56	12.05	11.57	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	177.48	15	\$1,273.23	13%	50%	\$702.14	13.65	13.11	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.25	15	\$0.11	13%	50%	\$42.42	47.97	46.07	FAN_VSD-Ventilation-MIDATL-v3.0-13
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	1%	34%	\$936.10	4.12	3.95	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.01	15	\$0.76	0%	11%	\$39.65	8.69	8.50	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.88	15	\$0.76	0%	11%	\$39.65	50.35	48.36	HVAC_DOAS-Heating-7PLN-v5-1
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	8,396.42	15	\$7,501.21	15%	15%	\$41.54	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,640.02	15	\$7,501.21	15%	15%	\$41.54	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	3.24	3.16	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	Existing	367.59	15	\$410.87	15%	45%	\$110.99	124.69	122.41	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	350.82	15	\$698.92	15%	75%	\$197.83	229.51	225.91	RTU_PREC-Cooling-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	537.36	20	\$1,175.09	15%	25%	\$113.42	1.68	1.76	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	377.28	20	\$1,175.09	15%	25%	\$113.42	0.77	0.74	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.07	5	\$0.75	30%	40%	\$84.48	41.35	40.89	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.63	5	\$0.75	30%	40%	\$84.48	4.58	4.50	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	30%	40%	\$84.48	13.59	13.21	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	122.40	10	\$8.63	25%	65%	\$9.12	9.58	9.32	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	134.49	10	\$17.56	25%	65%	\$16.89	5.26	5.12	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	33.33	10	\$16.82	25%	65%	\$65.32	1.29	1.25	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	0%	0%	\$7.21	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	470.87	15	\$15.38	16%	75%	\$3.25	22.40	21.79	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	501.65	4	\$75.87	25%	40%	\$40.67	14.51	14.12	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	12.18	11.85	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.60	38.79	37.73	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.01	15	\$0.36	3%	23%	\$36.42	130.23	130.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.42	15	\$0.60	3%	23%	\$42.92	182.32	182.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	446.45	15	\$56.14	1%	3%	\$13.16	3.46	3.54	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.01	15	\$65.99	1%	3%	\$130.28	0.12	0.12	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	8,202.48	11	\$26.48	15%	30%	\$0.40	60.37	60.78	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	839.92	16	\$1,864.95	5%	15%	\$218.92	41.21	41.49	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.20	9	\$0.65	15%	25%	\$81.16	49.87	51.81	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	92.15	8	\$56.85	15%	25%	\$101.67	26.51	27.54	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	115.23	7	\$3,486.31	15%	30%	\$5,527.01	49.72	51.65	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	294.13	12	\$50.74	33%	75%	\$20.04	184.24	179.91	RFG_ASH-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	18.07	4	\$3.68	27%	35%	\$59.47	4.25	4.48	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	703.73	15	\$347.21	23%	75%	\$51.16	1,892.92	1,904.45	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	135.49	2	\$10.74	33%	75%	\$60.39	12.20	19.00	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	16.61	15	\$508.61	16%	38%	\$3,176.16	518.09	521.24	RFG_HECOMP-Refrigeration-AEO15-4
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	291.45	15	\$5,552.98	16%	38%	\$1,975.75	757.77	762.38	RFG_HECOMP-Refrigeration-AEO15-4

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Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	736.77	15	\$305.13	33%	75%	\$42.95	459.74	462.54	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,327.75	15	\$539.09	16%	38%	\$42.10	690.42	694.63	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	2,789.63	10	\$449.00	15%	30%	\$21.68	1,023.95	1,030.19	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	282.23	16	\$153.90	33%	75%	\$54.74	123.46	124.99	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	101.49	15	\$135.00	16%	38%	\$138.53	5.55	5.62	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	248.63	16	\$105.92	33%	75%	\$51.06	41.34	49.94	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	191.40	10	\$521.11	33%	75%	\$439.69	31.82	38.45	RFG_DDEF-Refrigeration-VTTRM-1
Grocery	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	1,303.58	8	\$54,406.57	27%	35%	\$9,608.52	0.28	0.44	RFG_ADC-Refrigeration-PGE-R6-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	565.18	12	\$605.15	27%	35%	\$127.44	117.56	118.27	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	59.08	8	\$15.90	20%	75%	\$41.75	255.78	250.28	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	13.53	8	\$3.87	20%	75%	\$44.36	21.96	21.49	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	47.57	5	\$49.37	20%	75%	\$234.73	9.65	9.44	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	991.73	5	\$288.64	25%	75%	\$66.03	22.08	21.68	VEND_CTRL-Miscellaneous-SCE-17R0-32
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,777.60	18	\$8,815.42	25%	50%	\$163.38	23.28	22.63	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	434.67	15	\$335.00	0%	0%	\$50.78	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	249.29	15	\$335.00	0%	0%	\$50.78	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.63	4	\$37.32	10%	50%	\$709.67	6.43	5.33	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$4.62	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.62	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.62	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$75.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,319.63	18	\$4,231.40	0%	0%	\$161.53	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.99	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	125.33	7	\$423.28	0%	0%	\$570.19	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$570.19	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$570.19	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	19,691.81	15	\$1,114.41	0%	0%	\$5.64	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$5.64	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,240.06	6	\$37.07	1%	3%	\$5.55	1.83	1.77	ESTAR_WC-Miscellaneous-7PLN-v6-1
Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.22	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.80	25	\$4.24	0%	0%	\$48.23	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	1.17	25	\$4.24	0%	0%	\$48.23	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.85	25	\$4.24	0%	0%	\$48.23	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.55	25	\$4.24	0%	0%	\$48.23	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.95	25	\$4.24	0%	0%	\$48.23	0.00	0.00	ADVNC-AII-RSRCH-1

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Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.63	25	\$4.24	0%	0%	\$48.23	0.00	0.00	ADVNC-All-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.33	3	\$0.96	4%	27%	\$155.19	32.26	31.83	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.20	3	\$0.96	4%	27%	\$155.19	3.57	3.50	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.96	4%	27%	\$155.19	10.60	10.18	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.96	4%	27%	\$155.19	6.66	6.48	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.33	3	\$0.96	4%	27%	\$155.19	36.03	36.69	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.96	4%	27%	\$155.19	11.32	11.75	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	1.01	3	\$0.96	4%	27%	\$155.19	122.73	115.49	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.96	4%	27%	\$155.19	2.42	2.01	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	Existing	0.46	3	\$1.56	0%	0%	\$146.19	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	Existing	0.27	3	\$1.56	0%	0%	\$146.19	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Ventilation	Commissioning	sqft	Existing	0.12	3	\$1.56	0%	0%	\$146.19	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	Existing	0.04	3	\$1.56	0%	0%	\$146.19	0.00	0.00	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.38	3	\$1.56	0%	0%	\$146.19	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.12	3	\$1.56	0%	0%	\$146.19	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	Existing	2.32	3	\$1.56	0%	0%	\$146.19	0.00	0.00	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.46	3	\$0.50	10%	61%	\$46.41	99.04	97.73	COM_RCX-HVAC-AEG-1

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Grocery	Heating	Retrocommissioning	sqft	Existing	0.27	3	\$0.50	10%	61%	\$46.41	10.98	10.73	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.12	3	\$0.50	10%	61%	\$46.41	32.55	31.26	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.50	10%	61%	\$46.41	6.82	6.63	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.38	3	\$0.50	10%	61%	\$46.41	92.19	93.87	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.50	10%	61%	\$46.41	28.95	30.07	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.32	3	\$0.50	10%	61%	\$46.41	628.04	590.98	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.27	10	\$0.09	0%	0%	\$45.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	7.17	10	\$1.12	0%	0%	\$20.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.86	3	\$0.24	0%	0%	\$44.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	3.49	10	\$3.24	0%	0%	\$119.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.70	10	\$0.70	0%	0%	\$129.68	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	Existing	203.83	16	\$75.53	20%	75%	\$34.58	4.24	4.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,095.71	25	\$3,438.72	0%	0%	\$127.41	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.10	45	\$0.84	15%	50%	\$504.84	6.75	6.60	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$504.84	0.18	0.17	Building Energy Simulation Tool

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Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$504.84	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.64	20	\$0.81	45%	50%	\$124.22	6.44	6.29	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.81	45%	50%	\$124.22	-0.10	-0.10	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$124.22	-0.46	-0.45	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.10	45	\$1.70	15%	50%	\$946.20	5.46	5.34	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$946.20	0.08	0.08	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$946.20	0.37	0.36	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-6.43	18	\$0.59	15%	25%	\$9,999.00	-0.42	-0.41	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.33	18	\$0.59	15%	25%	\$9,999.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.24	18	\$0.59	15%	25%	\$9,999.00	0.02	0.02	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.19	30	\$37.07	66%	66%	\$279.16	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	4.43	30	\$37.07	66%	66%	\$279.16	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.83	30	\$37.07	66%	66%	\$279.16	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,810.49	10	\$914.46	15%	75%	\$19.79	0.06	0.06	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	550.72	15	\$248.07	15%	75%	\$43.61	1.03	0.98	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,379.49	15	\$263.92	15%	75%	\$18.52	0.26	0.25	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	41.46	15	\$248.07	15%	75%	\$579.17	0.03	0.03	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	44,364.61	10	\$1,796.53	15%	75%	\$5.09	0.18	0.17	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	199.08	5	\$267.96	18%	75%	\$293.88	14.38	13.68	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.64	15	\$0.05	10%	15%	\$7.82	3.91	3.75	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.67	14	\$5.25	6%	75%	\$198.90	4.96	4.74	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.60	18	\$0.26	15%	20%	\$37.41	7.20	7.02	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	489.20	15	\$189.00	19%	25%	\$37.40	2.41	2.30	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	176.28	15	\$1,273.23	19%	50%	\$699.17	4.79	4.58	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.37	15	\$0.16	19%	50%	\$42.24	16.84	16.08	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.04	15	\$0.23	1%	34%	\$623.67	1.73	1.66	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.93	15	\$0.76	0%	11%	\$32.99	2.31	2.21	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.31	15	\$0.76	0%	11%	\$32.99	21.22	20.26	HVAC_DOAS-Heating-7PLN-v5-1

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Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	6,967.89	15	\$7,501.21	15%	15%	\$45.91	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,945.46	15	\$7,501.21	15%	15%	\$45.91	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	New	7.18	3	\$33.20	15%	45%	\$1,580.01	0.18	0.17	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	New	303.20	15	\$410.87	15%	45%	\$132.78	49.11	47.64	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	289.37	15	\$698.92	15%	75%	\$236.67	109.67	107.07	RTU_PREC-Cooling-XCELCO-2017-18-1
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	386.22	20	\$1,175.09	15%	25%	\$149.62	0.51	0.48	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	266.55	20	\$1,175.09	15%	25%	\$149.62	0.19	0.18	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.88	5	\$0.75	30%	40%	\$86.27	5.59	5.38	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.59	5	\$0.75	30%	40%	\$86.27	0.69	0.67	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	30%	40%	\$86.27	3.25	3.11	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	116.99	10	\$8.63	25%	65%	\$9.27	1.80	1.70	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	128.55	10	\$17.56	25%	65%	\$17.17	0.99	0.94	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	31.85	10	\$16.82	25%	65%	\$66.39	0.29	0.27	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	0%	0%	\$7.33	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	450.06	15	\$15.38	1%	75%	\$3.31	7.77	7.42	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	479.48	4	\$75.87	25%	40%	\$41.34	1.59	1.50	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	0.71	0.67	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.38	11.05	10.57	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.95	15	\$0.36	11%	23%	\$37.14	75.13	73.55	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.33	15	\$0.60	11%	23%	\$43.78	105.18	102.98	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	417.55	15	\$56.14	1%	3%	\$13.42	0.82	0.80	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.89	15	\$65.99	1%	3%	\$122.18	0.03	0.03	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	7,594.16	11	\$26.48	15%	30%	\$0.41	14.30	13.81	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	777.63	16	\$1,864.95	5%	15%	\$225.17	11.73	11.36	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.11	9	\$0.65	15%	25%	\$83.93	10.39	10.15	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	85.09	8	\$56.85	15%	25%	\$105.13	5.10	4.98	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	106.39	7	\$3,486.31	15%	30%	\$5,715.23	8.66	8.46	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	276.92	12	\$50.74	41%	75%	\$20.36	36.54	34.80	RFG_ASH-Refrigeration-7PLN-v6-1

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Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	16.78	4	\$3.68	35%	35%	\$61.29	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	666.22	15	\$347.21	11%	75%	\$51.48	656.36	637.43	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	111.40	2	\$10.74	41%	75%	\$71.75	0.56	0.76	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	15.72	15	\$508.61	21%	38%	\$3,195.66	116.89	113.52	RFG_HECOMP-Refrigeration-AEO17-3
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	275.92	15	\$5,552.98	21%	38%	\$1,987.88	170.96	166.03	RFG_HECOMP-Refrigeration-AEO17-5
Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	697.50	15	\$305.13	41%	75%	\$43.21	103.72	100.73	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,256.98	15	\$539.09	21%	38%	\$42.36	155.77	151.28	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	2,640.94	10	\$449.00	20%	30%	\$21.81	154.44	149.58	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	266.91	16	\$153.90	41%	75%	\$55.26	28.51	27.92	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	95.99	15	\$135.00	21%	38%	\$139.84	1.25	1.22	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	214.33	16	\$105.92	41%	75%	\$56.80	9.63	9.51	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	164.99	10	\$521.11	41%	75%	\$489.13	5.76	5.76	RFG_DDEF-Refrigeration-VTTRM-1

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Grocery	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	12.76	8	\$647.70	35%	35%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	535.05	12	\$2,541.64	35%	35%	\$538.52	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	56.14	8	\$15.90	20%	75%	\$41.92	49.55	46.98	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	12.85	8	\$3.87	20%	75%	\$44.55	4.25	4.03	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	44.62	5	\$49.37	20%	75%	\$238.70	1.28	1.21	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	925.94	5	\$288.64	25%	75%	\$67.25	2.88	2.72	VEND_CTRL-Miscellaneous-SCE-17R0-41
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	7,092.54	18	\$8,815.42	25%	50%	\$108.85	17.12	16.69	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	316.31	15	\$335.00	0%	0%	\$64.21	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	188.74	15	\$335.00	0%	0%	\$64.21	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	12.43	4	\$37.32	10%	50%	\$727.90	0.67	0.56	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$4.07	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$4.07	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.07	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$53.63	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,443.59	18	\$4,231.40	0%	0%	\$107.61	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.90	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	119.79	7	\$423.28	0%	0%	\$579.54	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$579.54	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$579.54	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	18,821.70	15	\$1,114.41	0%	0%	\$5.73	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$5.73	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,240.06	6	\$37.07	1%	3%	\$5.55	0.39	0.37	ESTAR_WC-Miscellaneous-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.20	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.78	25	\$4.24	10%	15%	\$46.48	13.88	13.59	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	New	1.18	25	\$4.24	10%	15%	\$46.48	1.72	1.68	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.85	25	\$4.24	10%	15%	\$46.48	8.06	7.88	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.56	25	\$4.24	10%	15%	\$46.48	3.34	3.27	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.98	25	\$4.24	10%	15%	\$46.48	72.14	71.07	ADVNC-AII-RSRCH-1
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.64	25	\$4.24	10%	15%	\$46.48	16.85	16.63	ADVNC-AII-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	New	0.28	3	\$0.83	4%	27%	\$136.81	2.38	2.26	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.83	4%	27%	\$136.81	0.29	0.28	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.13	3	\$0.83	4%	27%	\$136.81	1.38	1.30	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.09	3	\$0.83	4%	27%	\$136.81	0.57	0.54	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.31	3	\$0.83	4%	27%	\$136.81	3.09	2.99	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.83	4%	27%	\$136.81	0.96	0.94	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	New	0.95	3	\$0.83	4%	27%	\$136.81	10.33	9.40	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.83	4%	27%	\$136.81	0.20	0.16	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	New	0.38	3	\$1.39	10%	61%	\$132.91	45.71	44.41	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	New	0.25	3	\$1.39	10%	61%	\$132.91	5.67	5.50	COM_CX-HVAC-AEG-1

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Grocery	Ventilation	Commissioning	sqft	New	0.18	3	\$1.39	10%	61%	\$132.91	26.55	25.72	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	New	0.04	3	\$1.39	10%	61%	\$132.91	3.67	3.56	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	New	0.35	3	\$1.39	10%	61%	\$132.91	197.94	194.01	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	New	0.11	3	\$1.39	10%	61%	\$132.91	46.24	45.50	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	New	2.19	3	\$1.39	10%	61%	\$132.91	1,766.89	1,680.13	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	New	0.38	3	\$0.44	0%	0%	\$42.19	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Heating	Retrocommissioning	sqft	New	0.25	3	\$0.44	0%	0%	\$42.19	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	New	0.18	3	\$0.44	0%	0%	\$42.19	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.44	0%	0%	\$42.19	0.00	0.00	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.35	3	\$0.44	0%	0%	\$42.19	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.44	0%	0%	\$42.19	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	New	2.19	3	\$0.44	0%	0%	\$42.19	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.25	10	\$0.09	0%	0%	\$45.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	6.77	10	\$1.12	0%	0%	\$20.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.75	3	\$0.24	0%	0%	\$45.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	3.29	10	\$3.24	0%	0%	\$121.96	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.66	10	\$0.70	0%	0%	\$132.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	New	203.83	16	\$75.53	20%	75%	\$34.58	1.00	0.96	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,277.80	25	\$3,477.87	0%	0%	\$115.24	0.00	0.00	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.40	45	\$0.84	15%	35%	\$55.26	18.31	18.54	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.61	45	\$0.84	15%	35%	\$55.26	1.40	1.36	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$55.26	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	1.06	20	\$0.86	15%	35%	\$72.35	47.98	48.58	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$72.35	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$72.35	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.94	20	\$0.81	45%	50%	\$103.79	10.61	10.75	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.81	45%	50%	\$103.79	-0.10	-0.10	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$103.79	-0.74	-0.72	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.09	45	\$1.70	15%	35%	\$49.92	-3.42	-3.46	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.75	45	\$1.70	15%	35%	\$49.92	3.48	3.40	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.57	45	\$1.70	15%	35%	\$49.92	25.08	24.70	Building Energy Simulation Tool

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Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	42.28	18	\$0.59	15%	50%	\$9,999.00	24.43	24.73	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-31.98	18	\$0.59	15%	50%	\$9,999.00	-0.93	-0.91	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-10.51	18	\$0.59	15%	50%	\$9,999.00	-6.68	-6.58	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	17.95	30	\$37.07	48%	48%	\$38.93	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	43.29	30	\$37.07	48%	48%	\$38.93	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	8.20	30	\$37.07	48%	48%	\$38.93	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	34,205.95	10	\$914.46	15%	75%	\$3.59	172.01	176.71	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	919.35	15	\$248.07	15%	75%	\$27.90	642.92	660.49	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,966.56	15	\$263.92	15%	75%	\$13.88	137.52	141.28	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	251.90	15	\$248.07	15%	75%	\$102.24	139.84	144.52	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	67,661.46	10	\$1,796.53	15%	75%	\$3.58	270.09	279.14	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	256.27	5	\$267.96	18%	75%	\$239.95	194.23	198.46	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.91	15	\$0.05	5%	15%	\$5.76	45.03	46.04	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.18	14	\$5.25	3%	75%	\$169.19	14.31	13.83	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.69	18	\$0.26	15%	20%	\$33.60	17.23	16.97	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,622.14	15	\$189.00	13%	25%	\$11.63	21.26	20.85	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	584.54	15	\$1,273.23	13%	50%	\$217.42	24.09	23.62	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.42	15	\$0.06	13%	50%	\$13.13	84.64	83.01	FAN_VSD-Ventilation-MIDATL-v3.0-13
Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.04	15	\$0.23	10%	20%	\$560.15	2.12	2.08	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	2.34	15	\$0.76	3%	7%	\$20.77	1.84	1.78	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.28	15	\$0.76	3%	7%	\$20.77	22.16	21.73	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	9,953.77	15	\$7,501.21	15%	15%	\$23.26	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	22,211.22	15	\$7,501.21	15%	15%	\$23.26	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,321.10	0.58	0.57	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	Existing	353.52	15	\$410.87	15%	45%	\$115.41	21.43	21.03	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	337.39	15	\$698.92	15%	75%	\$205.71	39.39	38.77	RTU_PREC-Cooling-XCELCO-2017-18-1
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	527.72	20	\$1,077.17	15%	25%	\$74.14	0.37	0.38	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	709.56	20	\$1,077.17	15%	25%	\$74.14	0.09	0.08	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.26	5	\$0.75	30%	40%	\$52.63	57.35	58.06	STAT_WIFI-AII-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.46	5	\$0.75	30%	40%	\$52.63	3.32	3.24	STAT_WIFI-AII-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.48	5	\$0.75	30%	40%	\$52.63	23.90	23.54	STAT_WIFI-AII-7PLN-v2-1

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Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	300.79	10	\$8.63	25%	65%	\$3.71	1.06	1.03	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	330.51	10	\$17.56	25%	65%	\$6.87	0.58	0.57	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	81.90	10	\$16.82	25%	65%	\$26.58	0.14	0.14	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	30%	\$7.21	1.91	1.87	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,157.45	15	\$15.38	16%	75%	\$1.32	2.48	2.42	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,232.78	4	\$75.87	25%	40%	\$16.55	1.61	1.56	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	1.35	1.31	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.57	4.30	4.18	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.95	15	\$0.36	3%	23%	\$38.62	130.44	130.57	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.34	15	\$0.60	3%	23%	\$45.52	182.62	182.79	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	321.89	15	\$56.14	1%	3%	\$18.22	3.55	3.65	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.02	15	\$65.99	1%	3%	\$130.06	0.12	0.12	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,609.32	11	\$26.48	15%	30%	\$0.50	52.06	52.34	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	676.78	16	\$1,864.95	5%	15%	\$271.56	35.54	35.73	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.75	9	\$0.65	15%	25%	\$53.25	17.79	17.97	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	121.15	8	\$56.85	15%	25%	\$73.80	9.46	9.55	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	151.49	7	\$3,486.31	15%	30%	\$4,011.82	17.74	17.91	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	21.21	12	\$50.74	4%	25%	\$277.92	1.50	1.47	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	7.13	4	\$24.51	4%	25%	\$1,110.48	0.34	0.40	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	32.77	15	\$347.21	0%	0%	\$1,122.26	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	28.09	2	\$10.74	4%	25%	\$290.40	0.56	0.88	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.77	15	\$508.61	2%	13%	\$9,999.00	7.64	7.83	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.57	15	\$5,552.98	2%	13%	\$9,999.00	11.17	11.45	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	102.93	15	\$305.13	4%	25%	\$314.01	6.78	6.95	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	412.21	15	\$539.09	2%	13%	\$138.53	10.18	10.44	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	866.06	10	\$449.00	0%	0%	\$71.32	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	49.07	16	\$153.90	4%	25%	\$327.66	1.12	1.18	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	17.65	15	\$135.00	2%	13%	\$829.18	0.05	0.05	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	272.90	16	\$105.92	4%	25%	\$49.54	1.82	2.41	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	210.08	10	\$521.11	4%	25%	\$426.57	1.40	1.85	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	90.09	8	\$18,135.52	4%	25%	\$9,999.00	0.06	0.10	RFG_ADC-Refrigeration-PGE-R6-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	175.46	12	\$605.15	4%	25%	\$419.30	8.67	8.88	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.47	8	\$15.90	0%	0%	\$260.49	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.98	8	\$3.87	0%	0%	\$615.09	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.43	5	\$49.37	0%	0%	\$3,254.67	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	901.13	5	\$288.64	25%	75%	\$72.66	6.30	6.19	VEND_CTRL-Miscellaneous-SCE-17R0-34
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	8,142.53	18	\$8,815.42	25%	50%	\$97.77	40.95	40.33	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	465.68	15	\$335.00	0%	0%	\$30.91	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	609.59	15	\$335.00	0%	0%	\$30.91	0.00	0.00	AEG - BEST

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Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	28.46	4	\$37.32	10%	50%	\$324.81	14.64	12.64	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$4.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$4.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$153.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	5,930.08	18	\$4,231.40	0%	5%	\$64.44	4.94	4.86	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	517.63	12	\$2,098.57	5%	7%	\$471.11	0.10	0.10	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.02	10	\$0.70	0%	5%	\$5,309.28	0.02	0.02	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	307.99	7	\$423.28	0%	5%	\$197.66	0.01	0.01	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	26.97	7	\$423.28	0%	5%	\$197.66	0.02	0.02	CW-Miscellaneous-RTF-v5.1-21

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Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	26.97	7	\$423.28	0%	5%	\$197.66	0.02	0.02	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	48,391.98	15	\$1,114.41	0%	5%	\$2.23	1.75	1.71	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,416.43	15	\$1,114.41	0%	5%	\$2.23	0.73	0.72	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	16,162.62	6	\$37.07	1%	3%	\$0.43	16.97	16.38	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.08	20	\$0.79	0%	5%	\$823.00	1.69	1.62	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.63	25	\$4.24	0%	0%	\$43.40	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	Existing	2.38	25	\$4.24	0%	0%	\$43.40	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.24	0%	0%	\$43.40	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	0.91	25	\$4.24	0%	0%	\$43.40	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.88	25	\$4.24	0%	0%	\$43.40	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$43.40	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	Existing	0.39	3	\$0.49	4%	28%	\$110.90	46.83	47.88	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	Existing	0.45	3	\$0.49	4%	28%	\$110.90	2.71	2.62	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.15	3	\$0.49	4%	28%	\$110.90	19.52	19.14	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.15	3	\$0.49	4%	28%	\$110.90	0.77	0.75	COM_SEM-Water Heating-AEG-1

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Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.32	3	\$0.49	4%	28%	\$110.90	38.59	39.42	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.49	4%	28%	\$110.90	4.21	4.25	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.49	4%	28%	\$110.90	3.80	3.62	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.49	4%	28%	\$110.90	5.75	4.97	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	Existing	0.55	3	\$2.74	0%	0%	\$503.53	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	Existing	0.63	3	\$2.74	0%	0%	\$503.53	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	Existing	0.21	3	\$2.74	0%	0%	\$503.53	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	Existing	0.07	3	\$2.74	0%	0%	\$503.53	0.00	0.00	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	Existing	0.36	3	\$2.74	0%	0%	\$503.53	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$2.74	0%	0%	\$503.53	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	Existing	0.07	3	\$2.74	0%	0%	\$503.53	0.00	0.00	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	Existing	0.55	3	\$0.87	12%	52%	\$159.84	108.07	110.49	COM_RCX-HVAC-AEG-1
Health	Heating	Retrocommissioning	sqft	Existing	0.63	3	\$0.87	12%	52%	\$159.84	6.25	6.04	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	Existing	0.21	3	\$0.87	12%	52%	\$159.84	45.04	44.18	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	Existing	0.07	3	\$0.87	12%	52%	\$159.84	0.59	0.58	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.36	3	\$0.87	12%	52%	\$159.84	74.21	75.80	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.87	12%	52%	\$159.84	8.10	8.18	COM_RCX-Lighting-AEG-1

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Health	Refrigeration	Retrocommissioning	sqft	Existing	0.07	3	\$0.87	12%	52%	\$159.84	14.61	13.93	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.25	10	\$0.09	0%	0%	\$46.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.20	10	\$1.12	0%	0%	\$722.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.24	0%	0%	\$1,583.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.10	10	\$3.24	0%	0%	\$4,282.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$4,646.48	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	Existing	218.36	16	\$75.53	20%	75%	\$32.28	3.24	3.06	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	12,521.30	25	\$20,545.49	0%	75%	\$127.41	83.20	80.68	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$159.12	1.48	1.45	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.28	45	\$0.84	15%	50%	\$159.12	0.59	0.58	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$159.12	1.25	1.22	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.52	20	\$0.86	15%	50%	\$137.23	23.72	23.15	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$137.23	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$137.23	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.19	20	\$0.81	45%	50%	\$8,843.91	1.24	1.21	Building Energy Simulation Tool

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Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.14	20	\$0.81	45%	50%	\$8,843.91	-0.04	-0.04	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$8,843.91	-0.29	-0.28	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$242.48	0.31	0.30	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.34	45	\$1.70	15%	50%	\$242.48	0.63	0.61	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.10	45	\$1.70	15%	50%	\$242.48	4.25	4.15	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	24.59	18	\$0.59	15%	35%	\$0.28	4.49	4.38	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	123.14	18	\$0.59	15%	35%	\$0.28	1.04	1.01	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	37.09	18	\$0.59	15%	35%	\$0.28	7.07	6.89	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	11.76	30	\$37.07	66%	66%	\$49.79	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	35.05	30	\$37.07	66%	66%	\$49.79	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.08	30	\$37.07	66%	66%	\$49.79	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	21,560.01	10	\$914.46	15%	75%	\$5.33	27.90	26.51	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	579.47	15	\$248.07	15%	75%	\$41.45	129.57	123.75	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,239.52	15	\$263.92	15%	75%	\$20.61	27.72	26.47	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	161.42	15	\$248.07	15%	75%	\$148.79	28.87	27.58	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	41,224.37	10	\$1,796.53	15%	75%	\$5.48	42.67	40.55	AEG-BEST

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Health	Cooling	HVAC - Economizer	HP cool	New	167.20	5	\$267.96	18%	75%	\$346.35	19.10	18.06	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.59	15	\$0.05	10%	15%	\$8.27	4.67	4.47	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.58	14	\$5.25	6%	75%	\$206.56	3.15	3.01	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.50	18	\$0.26	15%	20%	\$44.63	6.59	6.43	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,119.77	15	\$189.00	19%	25%	\$16.33	2.21	2.11	VENT_PMSM-Ventilation-AEG-2016-2
Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	403.51	15	\$1,273.23	19%	50%	\$305.19	4.39	4.19	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.06	19%	50%	\$18.44	15.44	14.74	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	10%	20%	\$744.09	0.46	0.44	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.86	15	\$0.76	3%	7%	\$30.52	0.43	0.41	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	3%	7%	\$30.52	2.89	2.76	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	6,518.40	15	\$7,501.21	15%	15%	\$29.74	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	17,985.38	15	\$7,501.21	15%	15%	\$29.74	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	New	7.23	3	\$33.20	15%	45%	\$1,568.40	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	New	293.82	15	\$410.87	15%	45%	\$137.01	8.72	8.46	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	280.41	15	\$698.92	15%	75%	\$244.22	19.46	19.00	RTU_PREC-Cooling-XCELCO-2017-18-1

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Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	417.97	20	\$1,077.17	15%	25%	\$88.80	0.12	0.11	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	590.23	20	\$1,077.17	15%	25%	\$88.80	0.03	0.03	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.83	5	\$0.75	30%	40%	\$68.92	6.67	6.40	STAT_WIFI-All-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.18	5	\$0.75	30%	40%	\$68.92	0.44	0.42	STAT_WIFI-All-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$68.92	2.98	2.86	STAT_WIFI-All-7PLN-v2-1
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	143.75	10	\$8.63	25%	65%	\$7.55	0.20	0.19	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	157.96	10	\$17.56	25%	65%	\$13.97	0.11	0.11	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	39.14	10	\$16.82	25%	65%	\$54.04	0.03	0.03	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	30%	\$7.33	0.73	0.71	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,106.31	15	\$15.38	1%	75%	\$1.35	0.88	0.84	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	589.16	4	\$75.87	25%	40%	\$33.64	0.18	0.17	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	0.08	0.08	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.34	1.25	1.20	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.89	15	\$0.36	11%	23%	\$39.49	76.83	75.39	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.25	15	\$0.60	11%	23%	\$46.54	107.56	105.55	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	300.69	15	\$56.14	1%	3%	\$18.61	0.86	0.84	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.81	15	\$65.99	1%	3%	\$122.24	0.03	0.03	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	6,119.15	11	\$26.48	15%	30%	\$0.51	12.62	12.17	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	626.59	16	\$1,864.95	5%	15%	\$279.28	10.35	10.02	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.63	9	\$0.65	15%	25%	\$54.78	3.79	3.66	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	112.72	8	\$56.85	15%	25%	\$75.92	1.86	1.79	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	140.94	7	\$3,486.31	15%	30%	\$4,127.38	3.16	3.04	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	19.97	12	\$50.74	4%	25%	\$282.24	0.38	0.36	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	6.36	4	\$24.51	4%	25%	\$1,184.67	0.04	0.04	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	30.79	15	\$347.21	0%	0%	\$1,137.93	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	23.09	2	\$10.74	4%	25%	\$345.60	0.03	0.05	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.73	15	\$508.61	2%	13%	\$9,999.00	2.20	2.15	RFG_HECOMP-Refrigeration-AEO17-3
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.75	15	\$5,552.98	2%	13%	\$9,999.00	3.22	3.14	RFG_HECOMP-Refrigeration-AEO17-5

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Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	96.70	15	\$305.13	4%	25%	\$318.40	1.95	1.91	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	387.27	15	\$539.09	2%	13%	\$140.47	2.93	2.86	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	813.67	10	\$449.00	0%	0%	\$72.32	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	45.55	16	\$153.90	4%	25%	\$336.14	0.33	0.33	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	16.38	15	\$135.00	2%	13%	\$850.65	0.01	0.01	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	235.65	16	\$105.92	4%	25%	\$55.04	0.54	0.58	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	181.41	10	\$521.11	4%	25%	\$473.92	0.32	0.36	RFG_DDEF-Refrigeration-VTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.64	8	\$647.70	4%	25%	\$9,999.00	0.01	0.02	RFG_ASH-Refrigeration-NMTRM-2016-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	164.85	12	\$5,648.09	4%	25%	\$3,968.11	2.23	2.18	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	9.00	8	\$15.90	0%	0%	\$261.57	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.93	8	\$3.87	0%	0%	\$617.65	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.22	5	\$49.37	0%	0%	\$3,309.63	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	841.35	5	\$288.64	25%	75%	\$74.01	0.84	0.79	VEND_CTRL-Miscellaneous-SCE-17R0-41
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	5,939.64	18	\$8,815.42	25%	50%	\$129.87	15.67	15.28	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	373.44	15	\$335.00	0%	0%	\$36.57	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	513.41	15	\$335.00	0%	0%	\$36.57	0.00	0.00	AEG - BEST
Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	28.11	4	\$37.32	10%	50%	\$327.51	1.62	1.39	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$4.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$4.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.04	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$63.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	4,325.74	18	\$4,231.40	0%	5%	\$85.60	1.89	1.84	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	487.34	12	\$2,098.57	5%	7%	\$478.43	0.03	0.02	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.02	10	\$0.65	0%	5%	\$5,005.50	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	294.39	7	\$423.28	0%	5%	\$200.66	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	25.80	7	\$423.28	0%	5%	\$200.66	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	25.80	7	\$423.28	0%	5%	\$200.66	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	46,253.71	15	\$1,114.41	0%	5%	\$2.27	0.50	0.48	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,310.78	15	\$1,114.41	0%	5%	\$2.27	0.21	0.20	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	8,081.31	6	\$37.07	1%	3%	\$0.85	3.66	3.53	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.08	20	\$0.71	0%	5%	\$744.36	0.49	0.47	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	New	1.67	25	\$4.24	10%	25%	\$41.45	49.54	48.45	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	New	2.37	25	\$4.24	10%	25%	\$41.45	3.26	3.19	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.71	25	\$4.24	10%	25%	\$41.45	22.17	21.67	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	New	0.92	25	\$4.24	10%	25%	\$41.45	1.13	1.11	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.91	25	\$4.24	10%	25%	\$41.45	225.55	222.72	ADVNC-AII-RSRCH-1

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Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$41.45	18.34	18.04	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	New	0.26	3	\$0.32	4%	28%	\$85.14	2.97	2.80	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	New	0.37	3	\$0.32	4%	28%	\$85.14	0.20	0.18	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.32	4%	28%	\$85.14	1.33	1.25	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	New	0.14	3	\$0.32	4%	28%	\$85.14	0.07	0.06	COM_SEM-Water Heating-AEG-1
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.29	3	\$0.32	4%	28%	\$85.14	3.38	3.28	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.32	4%	28%	\$85.14	0.37	0.35	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.32	4%	28%	\$85.14	0.33	0.30	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.32	4%	28%	\$85.14	0.49	0.42	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	New	0.36	3	\$1.67	12%	52%	\$373.46	42.69	41.37	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	New	0.51	3	\$1.67	12%	52%	\$373.46	2.81	2.72	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	New	0.15	3	\$1.67	12%	52%	\$373.46	19.11	18.50	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	New	0.07	3	\$1.67	12%	52%	\$373.46	0.33	0.31	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	New	0.34	3	\$1.67	12%	52%	\$373.46	161.99	159.27	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$1.67	12%	52%	\$373.46	13.17	12.88	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	New	0.06	3	\$1.67	12%	52%	\$373.46	38.41	36.54	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	New	0.36	3	\$0.53	0%	0%	\$118.55	0.00	0.00	COM_RCX-HVAC-AEG-1

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Health	Heating	Retrocommissioning	sqft	New	0.51	3	\$0.53	0%	0%	\$118.55	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.53	0%	0%	\$118.55	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	New	0.07	3	\$0.53	0%	0%	\$118.55	0.00	0.00	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	New	0.34	3	\$0.53	0%	0%	\$118.55	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.53	0%	0%	\$118.55	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.53	0%	0%	\$118.55	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.24	10	\$0.09	0%	0%	\$47.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.19	10	\$1.12	0%	0%	\$743.50	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.05	3	\$0.24	0%	0%	\$1,630.82	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.09	10	\$3.24	0%	0%	\$4,408.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$4,783.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	New	218.36	16	\$75.53	20%	75%	\$32.28	0.78	0.75	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	13,897.29	25	\$21,219.10	0%	75%	\$115.24	48.92	47.73	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$94.70	17.76	17.62	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.56	45	\$0.84	15%	35%	\$94.70	104.18	102.43	Building Energy Simulation Tool

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College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$94.70	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.68	20	\$0.86	15%	35%	\$109.28	180.89	179.48	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$109.28	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$109.28	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.51	20	\$0.81	45%	50%	\$273.40	66.94	66.42	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.21	20	\$0.81	45%	50%	\$273.40	-9.79	-9.62	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$273.40	-5.95	-5.82	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.47	45	\$1.70	15%	35%	\$295.97	-76.95	-76.35	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.71	45	\$1.70	15%	35%	\$295.97	41.30	40.60	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.13	45	\$1.70	15%	35%	\$295.97	25.11	24.54	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	31.11	18	\$0.59	15%	50%	\$3.06	115.19	114.29	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-11.31	18	\$0.59	15%	50%	\$3.06	-14.86	-14.61	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.13	18	\$0.59	15%	50%	\$3.06	-9.03	-8.83	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	12.19	30	\$37.07	48%	48%	\$48.24	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	39.52	30	\$37.07	48%	48%	\$48.24	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.28	30	\$37.07	48%	48%	\$48.24	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	20,227.62	10	\$914.46	15%	75%	\$5.88	232.96	229.22	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	581.25	15	\$248.07	15%	75%	\$42.73	930.97	916.00	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,339.52	15	\$263.92	15%	75%	\$19.72	214.55	211.10	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	136.76	5	\$267.96	18%	75%	\$435.34	553.19	542.53	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.51	15	\$0.05	5%	15%	\$10.10	146.93	145.74	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.08	14	\$5.25	3%	75%	\$502.25	443.40	433.48	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.30	18	\$0.26	15%	20%	\$77.56	44.83	43.81	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	505.25	15	\$189.00	13%	25%	\$36.93	55.59	53.87	VENT_PMSM-Ventilation-AEG-2016-2
College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	182.07	15	\$1,273.23	13%	50%	\$690.42	62.97	61.02	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.18	15	\$0.08	13%	50%	\$41.71	221.29	214.43	FAN_VSD-Ventilation-MIDATL-v3.0-13
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	10%	25%	\$1,293.01	8.41	8.15	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.75	15	\$0.76	3%	8%	\$31.52	86.58	84.64	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.64	15	\$0.76	3%	8%	\$31.52	102.85	99.65	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,545.84	15	\$7,501.21	15%	25%	\$33.72	138.76	137.64	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	16,634.44	15	\$7,501.21	15%	25%	\$33.72	147.62	144.32	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	15.64	15.29	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	Existing	172.94	15	\$410.87	15%	45%	\$235.92	281.02	275.88	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	165.05	15	\$698.92	15%	75%	\$420.51	515.36	507.27	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	258.08	20	\$979.24	15%	25%	\$106.28	9.12	9.15	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	522.28	20	\$979.24	15%	25%	\$106.28	112.66	107.50	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.70	5	\$0.75	30%	40%	\$83.67	186.17	184.72	STAT_WIFI-AII-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.09	5	\$0.75	30%	40%	\$83.67	102.25	100.53	STAT_WIFI-AII-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.20	5	\$0.75	30%	40%	\$83.67	62.18	60.76	STAT_WIFI-AII-7PLN-v2-1
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	175.37	10	\$8.63	25%	65%	\$6.37	60.39	58.77	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	192.70	10	\$17.56	25%	65%	\$11.79	33.18	32.29	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	47.75	10	\$16.82	25%	65%	\$45.59	8.09	7.87	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	20%	\$7.21	36.06	35.29	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	674.65	15	\$15.38	16%	75%	\$2.27	141.06	137.21	AEG-BEST

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College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	718.74	4	\$75.87	25%	40%	\$28.39	91.38	88.89	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	76.69	74.59	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,694.16	244.12	237.45	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.52	15	\$0.36	3%	23%	\$70.79	426.42	424.31	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.73	15	\$0.60	3%	23%	\$83.43	596.99	594.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	325.56	15	\$56.14	1%	3%	\$17.70	11.08	11.16	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.03	15	\$65.99	1%	3%	\$127.74	0.49	0.49	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,580.88	11	\$26.48	15%	30%	\$0.92	170.20	170.03	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	366.68	16	\$1,864.95	5%	15%	\$500.10	116.18	116.07	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.53	9	\$0.65	15%	25%	\$175.53	143.51	143.89	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	48.47	8	\$56.85	15%	25%	\$183.86	76.28	76.48	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	60.60	7	\$3,486.31	15%	30%	\$9,994.86	143.06	143.44	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	14.42	12	\$50.74	4%	25%	\$408.89	1.91	1.86	RFG_ASH-Refrigeration-7PLN-v6-1

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College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.48	4	\$24.51	4%	25%	\$1,348.96	0.56	0.60	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	23.02	15	\$347.21	0%	0%	\$1,601.33	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	18.71	2	\$10.74	4%	25%	\$440.27	0.70	1.06	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.54	15	\$508.61	2%	13%	\$9,999.00	10.04	10.34	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.53	15	\$5,552.98	2%	13%	\$9,999.00	14.69	15.12	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	72.31	15	\$305.13	4%	25%	\$448.05	8.91	9.17	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	289.56	15	\$539.09	2%	13%	\$197.67	13.38	13.78	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	608.38	10	\$449.00	0%	0%	\$101.77	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	33.14	16	\$153.90	4%	25%	\$486.85	1.40	1.48	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	11.92	15	\$135.00	2%	13%	\$1,232.04	0.06	0.07	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	227.06	16	\$105.92	4%	25%	\$55.66	3.24	3.87	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	174.79	10	\$521.11	4%	25%	\$479.27	2.49	2.98	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	59.99	8	\$18,135.52	4%	25%	\$9,999.00	0.08	0.12	RFG_ADC-Refrigeration-PGE-R6-1

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College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	123.26	12	\$605.15	4%	25%	\$598.29	11.39	11.73	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.44	8	\$15.90	0%	0%	\$383.24	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.66	8	\$3.87	0%	0%	\$904.94	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.33	5	\$49.37	0%	0%	\$4,788.39	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,660.23	5	\$288.64	25%	75%	\$39.44	15.24	14.96	VEND_CTRL-Miscellaneous-SCE-17R0-31
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,489.01	18	\$8,815.42	25%	50%	\$225.68	106.52	104.09	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	250.52	15	\$335.00	0%	0%	\$45.48	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	476.65	15	\$335.00	0%	0%	\$45.48	0.00	0.00	AEG - BEST
College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	23.85	4	\$37.32	10%	50%	\$386.24	74.02	63.59	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.00	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$55.53	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,540.99	18	\$4,231.40	0%	5%	\$148.74	12.85	12.55	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	701.82	12	\$2,098.57	5%	7%	\$346.98	0.26	0.25	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-1
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	140.86	10	\$19.59	15%	75%	\$18.06	7.67	7.44	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	63.66	5	\$37,813.23	15%	75%	\$9,999.00	1.56	1.49	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.30	0%	5%	\$3,974.55	1.05	1.02	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	179.57	7	\$423.28	0%	5%	\$384.73	0.63	0.62	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.11	7	\$423.28	0%	5%	\$384.73	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.11	7	\$423.28	0%	5%	\$384.73	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	28,213.40	15	\$1,114.41	0%	5%	\$3.91	99.64	96.92	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	163.47	15	\$1,114.41	0%	5%	\$3.91	0.10	0.09	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,319.02	6	\$37.07	1%	3%	\$5.21	8.25	7.97	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.11	0%	5%	\$823.00	1.75	1.68	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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College	Cooling	Advanced New Construction Designs	sqft	Existing	0.93	25	\$4.24	0%	0%	\$64.96	0.00	0.00	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	Existing	2.02	25	\$4.24	0%	0%	\$64.96	0.00	0.00	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.24	0%	0%	\$64.96	0.00	0.00	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$64.96	0.00	0.00	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.94	25	\$4.24	0%	0%	\$64.96	0.00	0.00	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.24	0%	0%	\$64.96	0.00	0.00	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	Existing	0.22	3	\$0.18	3%	29%	\$66.70	165.54	164.19	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	Existing	0.34	3	\$0.18	3%	29%	\$66.70	90.92	88.89	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	Existing	0.06	3	\$0.18	3%	29%	\$66.70	55.29	53.57	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.18	3%	29%	\$66.70	47.43	46.13	COM_SEM-Water Heating-AEG-1
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.16	3	\$0.18	3%	29%	\$66.70	130.34	130.78	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.18	3%	29%	\$66.70	36.81	36.91	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.18	3%	29%	\$66.70	6.24	5.18	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.18	3%	29%	\$66.70	31.51	27.07	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	Existing	0.30	3	\$1.03	0%	0%	\$312.76	0.00	0.00	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	Existing	0.47	3	\$1.03	0%	0%	\$312.76	0.00	0.00	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	Existing	0.09	3	\$1.03	0%	0%	\$312.76	0.00	0.00	COM_CX-HVAC-AEG-1

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College	Water Heating	Commissioning	sqft	Existing	0.04	3	\$1.03	0%	0%	\$312.76	0.00	0.00	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	Existing	0.18	3	\$1.03	0%	0%	\$312.76	0.00	0.00	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$1.03	0%	0%	\$312.76	0.00	0.00	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$1.03	0%	0%	\$312.76	0.00	0.00	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	Existing	0.30	3	\$0.33	10%	46%	\$99.28	317.36	314.79	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	Existing	0.47	3	\$0.33	10%	46%	\$99.28	174.31	170.41	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	Existing	0.09	3	\$0.33	10%	46%	\$99.28	105.99	102.70	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.33	10%	46%	\$99.28	30.31	29.48	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.18	3	\$0.33	10%	46%	\$99.28	208.23	208.93	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.33	10%	46%	\$99.28	58.80	58.96	COM_RCX-Lighting-AEG-1
College	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.33	10%	46%	\$99.28	19.94	16.55	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$90.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.12	0%	0%	\$3,109.59	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$6,820.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	Existing	97.56	16	\$75.53	20%	75%	\$72.24	8.67	8.21	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	994.44	25	\$1,631.72	0%	75%	\$127.41	47.22	45.79	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$522.64	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.10	45	\$0.84	15%	50%	\$522.64	18.98	18.53	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$522.64	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.43	20	\$0.86	15%	50%	\$169.40	111.55	108.97	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$169.40	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$169.40	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.14	20	\$0.81	45%	50%	\$784.72	10.44	10.20	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$784.72	-1.16	-1.13	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$784.72	-0.77	-0.75	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$1.70	15%	50%	\$2,419.96	-4.97	-4.86	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$2,419.96	3.57	3.48	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,419.96	2.35	2.30	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	19.77	18	\$0.59	15%	35%	\$10.08	22.95	22.40	Building Energy Simulation Tool

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College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-12.09	18	\$0.59	15%	35%	\$10.08	-4.89	-4.77	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-2.48	18	\$0.59	15%	35%	\$10.08	-3.23	-3.15	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	8.04	30	\$37.07	66%	66%	\$54.20	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	New	36.32	30	\$37.07	66%	66%	\$54.20	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.30	30	\$37.07	66%	66%	\$54.20	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,788.68	10	\$914.46	15%	75%	\$9.75	34.20	32.50	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	338.76	15	\$248.07	15%	75%	\$70.89	169.78	162.14	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	780.67	15	\$263.92	15%	75%	\$32.73	39.13	37.37	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	87.56	5	\$267.96	18%	75%	\$664.62	52.01	49.32	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.33	15	\$0.05	10%	15%	\$14.82	15.18	14.54	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.00	14	\$5.25	6%	75%	\$534.83	116.79	111.64	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.29	18	\$0.26	15%	20%	\$76.51	23.86	23.26	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	502.22	15	\$189.00	19%	25%	\$36.42	8.03	7.67	VENT_PMSM-Ventilation-AEG-2016-2

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College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	180.98	15	\$1,273.23	19%	50%	\$680.80	15.95	15.23	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.18	15	\$0.08	19%	50%	\$41.13	56.04	53.51	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	25%	\$1,275.56	2.56	2.44	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.58	15	\$0.76	3%	8%	\$33.24	24.10	23.06	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.64	15	\$0.76	3%	8%	\$33.24	31.26	29.85	HVAC_DOAS-Heating-7PLN-v5-1
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,657.54	15	\$7,501.21	15%	25%	\$38.53	28.68	27.47	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,287.33	15	\$7,501.21	15%	25%	\$38.53	41.75	39.94	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	New	5.98	3	\$33.20	15%	45%	\$1,897.14	0.77	0.73	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	New	118.79	15	\$410.87	15%	45%	\$338.88	98.41	95.46	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	New	113.37	15	\$698.92	15%	75%	\$604.02	219.43	214.23	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	204.41	20	\$979.24	15%	25%	\$116.18	2.98	2.86	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	496.15	20	\$979.24	15%	25%	\$116.18	40.20	38.55	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.46	5	\$0.75	30%	40%	\$97.54	21.57	20.73	STAT_WIFI-AII-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.00	5	\$0.75	30%	40%	\$97.54	16.21	15.57	STAT_WIFI-AII-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.21	5	\$0.75	30%	40%	\$97.54	10.70	10.26	STAT_WIFI-AII-7PLN-v2-1

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College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	167.62	10	\$8.63	25%	65%	\$6.47	12.05	11.42	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	184.18	10	\$17.56	25%	65%	\$11.98	6.62	6.27	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	45.64	10	\$16.82	25%	65%	\$46.34	1.92	1.83	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	20%	\$7.33	14.25	13.84	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	644.84	15	\$15.38	1%	75%	\$2.31	52.00	49.66	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	686.98	4	\$75.87	25%	40%	\$28.85	10.63	10.02	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	4.75	4.47	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.94	73.92	70.65	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.48	15	\$0.36	11%	23%	\$72.37	261.34	254.79	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.68	15	\$0.60	11%	23%	\$85.30	365.88	356.71	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	303.64	15	\$56.14	1%	3%	\$18.09	2.78	2.67	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.99	15	\$65.99	1%	3%	\$119.59	0.12	0.12	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,315.32	11	\$26.48	15%	30%	\$0.94	42.88	41.07	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	339.48	16	\$1,864.95	5%	15%	\$514.00	35.16	33.81	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.49	9	\$0.65	15%	25%	\$179.00	32.03	30.65	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	45.29	8	\$56.85	15%	25%	\$187.48	15.72	15.03	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	56.64	7	\$3,486.31	15%	30%	\$9,999.00	26.70	25.51	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	13.57	12	\$50.74	4%	25%	\$415.24	0.50	0.47	RFG_ASH-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.98	4	\$24.51	4%	25%	\$1,406.63	0.07	0.06	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	21.72	15	\$347.21	0%	0%	\$1,615.60	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	15.41	2	\$10.74	4%	25%	\$517.98	0.04	0.06	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.51	15	\$508.61	2%	13%	\$9,999.00	3.00	2.95	RFG_HECOMP-Refrigeration-AEO17-3
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.99	15	\$5,552.98	2%	13%	\$9,999.00	4.39	4.31	RFG_HECOMP-Refrigeration-AEO17-5
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	68.21	15	\$305.13	4%	25%	\$452.05	2.66	2.61	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	273.15	15	\$539.09	2%	13%	\$199.43	4.00	3.92	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	573.90	10	\$449.00	0%	0%	\$102.68	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	30.86	16	\$153.90	4%	25%	\$499.58	0.43	0.43	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	11.10	15	\$135.00	2%	13%	\$1,264.25	0.02	0.02	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	201.40	16	\$105.92	4%	25%	\$59.75	1.06	1.08	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	155.04	10	\$521.11	4%	25%	\$514.51	0.62	0.65	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.77	8	\$647.70	4%	25%	\$9,999.00	0.02	0.02	RFG_ASH-Refrigeration-NMTRM-2016-1
College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	116.27	12	\$5,648.09	4%	25%	\$5,633.78	3.03	2.98	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.12	8	\$15.90	0%	0%	\$384.84	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.63	8	\$3.87	0%	0%	\$908.71	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.19	5	\$49.37	0%	0%	\$4,869.26	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,550.09	5	\$288.64	25%	75%	\$40.17	2.01	1.90	VEND_CTRL-Miscellaneous-SCE-17R0-41
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,466.53	18	\$8,815.42	25%	50%	\$222.63	56.70	55.27	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	200.90	15	\$335.00	0%	0%	\$49.16	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	458.80	15	\$335.00	0%	0%	\$49.16	0.00	0.00	AEG - BEST

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College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	23.54	4	\$37.32	10%	50%	\$390.26	8.46	7.24	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.89	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.89	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.89	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$24.56	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,524.62	18	\$4,231.40	0%	5%	\$146.73	6.84	6.67	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	662.49	12	\$2,098.57	5%	7%	\$351.95	0.07	0.07	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
College	Miscellaneous	Pool Pump - Timer	perBldg	New	135.58	10	\$19.59	15%	75%	\$18.16	2.84	2.75	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	New	62.79	5	\$37,813.23	15%	75%	\$9,999.00	0.22	0.21	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.29	0%	5%	\$3,784.54	0.25	0.24	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	171.63	7	\$423.28	0%	5%	\$390.93	0.12	0.11	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	2.98	7	\$423.28	0%	5%	\$390.93	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	2.98	7	\$423.28	0%	5%	\$390.93	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	26,966.75	15	\$1,114.41	0%	5%	\$3.98	29.43	28.11	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	151.27	15	\$1,114.41	0%	5%	\$3.98	0.03	0.03	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,319.02	6	\$37.07	1%	3%	\$5.21	1.85	1.79	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.10	0%	5%	\$744.36	0.53	0.51	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
College	Cooling	Advanced New Construction Designs	sqft	New	0.93	25	\$4.24	10%	30%	\$62.58	212.65	208.10	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	New	2.02	25	\$4.24	10%	30%	\$62.58	159.85	156.36	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	New	0.41	25	\$4.24	10%	30%	\$62.58	105.56	103.19	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	New	0.54	25	\$4.24	10%	30%	\$62.58	88.18	86.20	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.96	25	\$4.24	10%	30%	\$62.58	964.33	945.62	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	30%	\$62.58	204.55	200.68	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	New	0.14	3	\$0.14	3%	29%	\$55.76	10.45	9.89	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	New	0.31	3	\$0.14	3%	29%	\$55.76	7.85	7.42	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.14	3%	29%	\$55.76	5.19	4.88	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.14	3%	29%	\$55.76	4.33	4.08	COM_SEM-Water Heating-AEG-1

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College	Interior Lighting	Strategic Energy Management	sqft	New	0.15	3	\$0.14	3%	29%	\$55.76	11.85	11.27	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.14	3%	29%	\$55.76	3.35	3.19	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.14	3%	29%	\$55.76	0.53	0.43	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.14	3%	29%	\$55.76	2.79	2.38	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	New	0.20	3	\$0.76	10%	46%	\$258.01	123.95	120.27	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	New	0.43	3	\$0.76	10%	46%	\$258.01	93.17	90.33	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	New	0.09	3	\$0.76	10%	46%	\$258.01	61.52	59.58	COM_CX-HVAC-AEG-1
College	Water Heating	Commissioning	sqft	New	0.04	3	\$0.76	10%	46%	\$258.01	17.13	16.59	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	New	0.17	3	\$0.76	10%	46%	\$258.01	468.39	455.76	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.76	10%	46%	\$258.01	99.35	96.72	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.76	10%	46%	\$258.01	18.34	16.48	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	New	0.20	3	\$0.24	0%	0%	\$81.90	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	New	0.43	3	\$0.24	0%	0%	\$81.90	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	New	0.09	3	\$0.24	0%	0%	\$81.90	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.24	0%	0%	\$81.90	0.00	0.00	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	New	0.17	3	\$0.24	0%	0%	\$81.90	0.00	0.00	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.24	0%	0%	\$81.90	0.00	0.00	COM_RCX-Lighting-AEG-1

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College	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.24	0%	0%	\$81.90	0.00	0.00	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$92.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.04	10	\$1.12	0%	0%	\$3,287.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$7,211.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	New	97.56	16	\$75.53	20%	75%	\$72.24	2.18	2.08	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,089.94	25	\$1,664.17	0%	75%	\$115.24	28.54	27.84	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$179.92	5.21	5.17	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.30	45	\$0.84	15%	35%	\$179.92	20.96	20.90	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$179.92	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.34	20	\$0.86	15%	35%	\$218.57	53.04	52.62	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$218.57	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$218.57	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.25	20	\$0.81	45%	50%	\$571.47	19.63	19.47	Building Energy Simulation Tool

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School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.81	45%	50%	\$571.47	-1.97	-1.96	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.81	45%	50%	\$571.47	-2.12	-2.07	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.23	45	\$1.70	15%	35%	\$539.69	-22.56	-22.39	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.38	45	\$1.70	15%	35%	\$539.69	8.31	8.29	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$1.70	15%	35%	\$539.69	8.93	8.72	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	15.55	18	\$0.59	15%	50%	\$6.34	33.77	33.51	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.08	18	\$0.59	15%	50%	\$6.34	-2.99	-2.98	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.04	18	\$0.59	15%	50%	\$6.34	-3.21	-3.14	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.10	30	\$37.07	48%	48%	\$92.95	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	21.25	30	\$37.07	48%	48%	\$92.95	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.10	30	\$37.07	48%	48%	\$92.95	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	10,113.81	10	\$914.46	15%	75%	\$11.76	67.75	66.66	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	290.63	15	\$248.07	15%	75%	\$85.45	270.73	266.38	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	669.76	15	\$263.92	15%	75%	\$39.45	62.39	61.39	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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School	Cooling	HVAC - Economizer	HP cool	Existing	68.38	5	\$267.96	18%	75%	\$870.68	160.87	157.77	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.25	15	\$0.05	5%	15%	\$20.19	42.73	42.38	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.68	14	\$5.25	3%	75%	\$813.00	88.49	88.41	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.26	15%	20%	\$158.35	15.93	15.57	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	247.48	15	\$189.00	13%	25%	\$75.40	19.60	18.99	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	89.18	15	\$1,273.23	13%	50%	\$1,409.54	22.20	21.51	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.09	15	\$0.08	13%	50%	\$85.15	78.01	75.60	FAN_VSD-Ventilation-MIDATL-v3.0-13
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	24%	49%	\$2,639.78	4.98	4.83	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.94	15	\$0.76	8%	16%	\$60.89	29.06	29.03	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.32	15	\$0.76	8%	16%	\$60.89	60.97	59.08	HVAC_DOAS-Heating-7PLN-v5-1
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,772.92	15	\$7,501.21	15%	15%	\$64.72	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,944.70	15	\$7,501.21	15%	15%	\$64.72	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	9.08	8.88	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	Existing	86.47	15	\$410.87	15%	45%	\$471.84	82.37	80.86	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	82.52	15	\$698.92	15%	75%	\$841.02	151.61	149.23	RTU_PREC-Cooling-XCELCO-2017-18-1

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School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	129.04	20	\$979.24	15%	25%	\$187.75	2.66	2.67	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	311.73	20	\$979.24	15%	25%	\$187.75	13.31	12.70	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.35	5	\$0.75	30%	40%	\$162.72	54.58	54.16	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$162.72	20.58	20.52	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.10	5	\$0.75	30%	40%	\$162.72	22.10	21.60	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	87.75	10	\$8.63	25%	65%	\$12.73	16.88	16.43	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	96.42	10	\$17.56	25%	65%	\$23.57	9.27	9.03	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	23.89	10	\$16.82	25%	65%	\$91.12	2.27	2.20	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	20%	\$7.21	10.18	9.96	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	337.56	15	\$15.38	16%	75%	\$4.54	39.49	38.41	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	359.62	4	\$75.87	25%	40%	\$56.74	25.58	24.88	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	21.47	20.88	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,694.16	68.34	66.47	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.33	15	\$0.36	3%	23%	\$109.92	199.95	198.59	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.47	15	\$0.60	3%	23%	\$129.55	279.94	278.03	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	231.71	15	\$56.14	1%	3%	\$25.83	5.41	5.59	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.00	15	\$65.99	1%	3%	\$132.71	0.13	0.13	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,476.31	11	\$26.48	15%	30%	\$1.33	84.93	84.64	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	253.57	16	\$1,864.95	5%	15%	\$722.57	57.98	57.78	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.47	9	\$0.65	15%	25%	\$197.17	77.13	76.87	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	44.21	8	\$56.85	15%	25%	\$200.25	40.99	40.86	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	55.28	7	\$3,486.31	15%	30%	\$9,999.00	76.89	76.63	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	15.23	12	\$50.74	4%	25%	\$387.21	3.42	3.34	RFG_ASH-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.72	4	\$24.51	4%	25%	\$1,310.47	0.91	1.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	24.36	15	\$347.21	0%	0%	\$1,498.52	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	20.09	2	\$10.74	4%	25%	\$406.59	1.07	1.67	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.57	15	\$508.61	2%	13%	\$9,999.00	17.82	18.13	RFG_HECOMP-Refrigeration-AEO15-4
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	10.09	15	\$5,552.98	2%	13%	\$9,999.00	26.06	26.52	RFG_HECOMP-Refrigeration-AEO15-4

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School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	76.52	15	\$305.13	4%	25%	\$419.29	15.81	16.09	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	306.46	15	\$539.09	2%	13%	\$184.98	23.74	24.17	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	643.87	10	\$449.00	0%	0%	\$95.24	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	35.02	16	\$153.90	4%	25%	\$455.44	2.49	2.60	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	12.59	15	\$135.00	2%	13%	\$1,152.56	0.11	0.12	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	240.53	16	\$105.92	4%	25%	\$52.37	5.14	6.22	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	185.16	10	\$521.11	4%	25%	\$450.98	3.95	4.79	RFG_DDEF-Refrigeration-VTTRM-1
School	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	64.43	8	\$18,135.52	4%	25%	\$9,999.00	0.12	0.19	RFG_ADC-Refrigeration-PGE-R6-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	130.45	12	\$605.15	4%	25%	\$559.88	20.21	20.57	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.80	8	\$15.90	0%	0%	\$362.92	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.70	8	\$3.87	0%	0%	\$856.96	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.46	5	\$49.37	0%	0%	\$4,534.51	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,858.57	5	\$288.64	25%	75%	\$35.23	29.69	29.15	VEND_CTRL-Miscellaneous-SCE-17R0-28
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,708.98	18	\$8,815.42	25%	50%	\$460.74	37.86	37.00	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	125.26	15	\$335.00	0%	0%	\$83.50	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	270.16	15	\$335.00	0%	0%	\$83.50	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	15.38	4	\$37.32	10%	50%	\$591.22	35.18	29.71	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.51	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.51	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.51	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$11.89	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,244.62	18	\$4,231.40	0%	0%	\$303.66	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	171.44	10	\$19.59	15%	75%	\$14.84	0.45	0.44	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	38.74	5	\$37,813.23	15%	75%	\$9,999.00	0.02	0.02	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.17	0%	0%	\$4,446.47	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	89.85	7	\$423.28	0%	0%	\$733.94	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.79	7	\$423.28	0%	0%	\$733.94	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.79	7	\$423.28	0%	0%	\$733.94	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	14,116.59	15	\$1,114.41	0%	0%	\$7.76	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	198.97	15	\$1,114.41	0%	0%	\$7.76	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	833.76	6	\$37.07	1%	3%	\$8.25	3.79	3.66	ESTAR_WC-Miscellaneous-7PLN-v6-1
School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.07	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.47	25	\$4.24	0%	0%	\$117.96	0.00	0.00	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	Existing	1.05	25	\$4.24	0%	0%	\$117.96	0.00	0.00	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$117.96	0.00	0.00	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$117.96	0.00	0.00	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.68	25	\$4.24	0%	0%	\$117.96	0.00	0.00	ADVNC-AII-RSRCH-1

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School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$117.96	0.00	0.00	ADVNC-All-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.06	2%	22%	\$39.31	37.03	36.73	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.06	2%	22%	\$39.31	13.96	13.94	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.06	2%	22%	\$39.31	14.99	14.53	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.06	2%	22%	\$39.31	10.21	9.93	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.06	2%	22%	\$39.31	49.04	50.15	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.06	2%	22%	\$39.31	15.22	15.17	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.06	2%	22%	\$39.31	7.59	6.99	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.06	2%	22%	\$39.31	11.52	9.73	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.33	0%	0%	\$171.90	0.00	0.00	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	Existing	0.25	3	\$0.33	0%	0%	\$171.90	0.00	0.00	COM_CX-HVAC-AEG-1
School	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.33	0%	0%	\$171.90	0.00	0.00	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.33	0%	0%	\$171.90	0.00	0.00	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.33	0%	0%	\$171.90	0.00	0.00	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.33	0%	0%	\$171.90	0.00	0.00	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	Existing	0.03	3	\$0.33	0%	0%	\$171.90	0.00	0.00	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	Existing	0.15	3	\$0.10	10%	47%	\$54.57	94.85	94.08	COM_RCX-HVAC-AEG-1

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School	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.10	10%	47%	\$54.57	35.75	35.72	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.10	10%	47%	\$54.57	38.40	37.21	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.10	10%	47%	\$54.57	8.72	8.48	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.10	10%	47%	\$54.57	104.67	107.06	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.10	10%	47%	\$54.57	32.48	32.37	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	Existing	0.03	3	\$0.10	10%	47%	\$54.57	32.38	29.83	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$132.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.11	10	\$1.12	0%	0%	\$1,327.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.03	3	\$0.24	0%	0%	\$2,911.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.05	10	\$3.24	0%	0%	\$7,870.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$8,540.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	Existing	88.84	16	\$75.53	20%	75%	\$79.33	5.68	5.38	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,075.08	25	\$1,764.04	0%	0%	\$127.41	0.00	0.00	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,007.49	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.05	45	\$0.84	15%	50%	\$1,007.49	3.56	3.48	Building Energy Simulation Tool

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School	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,007.49	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.21	20	\$0.86	15%	50%	\$338.81	30.66	29.95	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$338.81	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$338.81	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.81	45%	50%	\$1,597.17	2.87	2.80	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$1,597.17	-0.22	-0.21	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.81	45%	50%	\$1,597.17	-0.26	-0.25	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$4,626.41	-1.37	-1.34	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$1.70	15%	50%	\$4,626.41	0.67	0.65	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$4,626.41	0.78	0.77	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	9.88	18	\$0.59	15%	35%	\$21.89	6.31	6.16	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-6.30	18	\$0.59	15%	35%	\$21.89	-0.92	-0.90	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.22	18	\$0.59	15%	35%	\$21.89	-1.08	-1.05	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.02	30	\$37.07	66%	66%	\$105.63	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	New	18.91	30	\$37.07	66%	66%	\$105.63	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.11	30	\$37.07	66%	66%	\$105.63	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,894.34	10	\$914.46	15%	75%	\$19.50	9.36	8.89	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	169.38	15	\$248.07	15%	75%	\$141.78	46.46	44.37	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	390.34	15	\$263.92	15%	75%	\$65.45	10.71	10.23	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	43.78	5	\$267.96	18%	75%	\$1,329.26	14.22	13.49	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.17	15	\$0.05	10%	15%	\$29.65	4.15	3.98	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.61	14	\$5.25	6%	75%	\$881.02	21.81	20.88	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.14	18	\$0.26	15%	20%	\$156.21	7.95	7.75	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	246.00	15	\$189.00	19%	25%	\$74.35	2.66	2.54	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	88.64	15	\$1,273.23	19%	50%	\$1,389.90	5.29	5.05	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.09	15	\$0.08	19%	50%	\$83.96	18.59	17.75	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	24%	49%	\$2,604.15	1.43	1.36	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.82	15	\$0.76	8%	16%	\$65.12	7.57	7.25	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.31	15	\$0.76	8%	16%	\$65.12	17.44	16.65	HVAC_DOAS-Heating-7PLN-v5-1

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School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,828.85	15	\$7,501.21	15%	15%	\$74.79	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,958.29	15	\$7,501.21	15%	15%	\$74.79	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	New	5.98	3	\$33.20	15%	45%	\$1,897.16	0.42	0.40	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	New	59.40	15	\$410.87	15%	45%	\$677.77	27.02	26.21	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	New	56.69	15	\$698.92	15%	75%	\$1,208.06	60.33	58.91	RTU_PREC-Cooling-XCELCO-2017-18-1
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	102.21	20	\$979.24	15%	25%	\$204.32	0.82	0.78	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	296.13	20	\$979.24	15%	25%	\$204.32	4.46	4.28	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.23	5	\$0.75	30%	40%	\$191.25	5.94	5.72	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.52	5	\$0.75	30%	40%	\$191.25	3.05	2.93	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.10	5	\$0.75	30%	40%	\$191.25	3.58	3.43	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	83.87	10	\$8.63	25%	65%	\$12.94	3.17	3.00	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	92.16	10	\$17.56	25%	65%	\$23.95	1.74	1.65	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	22.83	10	\$16.82	25%	65%	\$92.62	0.51	0.48	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	20%	\$7.33	3.78	3.67	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	322.65	15	\$15.38	1%	75%	\$4.61	13.70	13.08	AEG-BEST

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School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	343.73	4	\$75.87	25%	40%	\$57.67	2.80	2.64	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	1.25	1.18	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.94	19.48	18.61	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.36	11%	23%	\$112.18	115.37	112.36	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.44	15	\$0.60	11%	23%	\$132.22	161.51	157.30	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	217.05	15	\$56.14	1%	3%	\$26.33	1.28	1.25	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.77	15	\$65.99	1%	3%	\$124.94	0.03	0.03	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,292.66	11	\$26.48	15%	30%	\$1.36	20.14	19.24	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	234.76	16	\$1,864.95	5%	15%	\$742.49	16.52	15.85	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.44	9	\$0.65	15%	25%	\$200.53	16.21	15.45	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	41.40	8	\$56.85	15%	25%	\$203.66	7.96	7.58	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	51.77	7	\$3,486.31	15%	30%	\$9,999.00	13.52	12.86	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	14.33	12	\$50.74	4%	25%	\$393.23	0.85	0.81	RFG_ASH-Refrigeration-7PLN-v6-1

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School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	5.19	4	\$24.51	4%	25%	\$1,373.42	0.10	0.10	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	22.96	15	\$347.21	0%	0%	\$1,514.25	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	16.51	2	\$10.74	4%	25%	\$484.11	0.06	0.08	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.54	15	\$508.61	2%	13%	\$9,999.00	5.02	4.89	RFG_HECOMP-Refrigeration-AEO17-3
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	9.51	15	\$5,552.98	2%	13%	\$9,999.00	7.34	7.15	RFG_HECOMP-Refrigeration-AEO17-5
School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	72.13	15	\$305.13	4%	25%	\$423.69	4.45	4.34	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	288.85	15	\$539.09	2%	13%	\$186.92	6.69	6.51	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	606.88	10	\$449.00	0%	0%	\$96.23	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	32.64	16	\$153.90	4%	25%	\$466.04	0.72	0.71	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	11.74	15	\$135.00	2%	13%	\$1,179.38	0.03	0.03	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	212.97	16	\$105.92	4%	25%	\$56.45	1.52	1.57	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	163.95	10	\$521.11	4%	25%	\$486.10	0.90	0.95	RFG_DDEF-Refrigeration-VTTRM-1

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School	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.89	8	\$647.70	4%	25%	\$9,999.00	0.02	0.03	RFG_ASH-Refrigeration-NMTRM-2016-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	122.95	12	\$5,648.09	4%	25%	\$5,280.36	5.08	4.95	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.46	8	\$15.90	0%	0%	\$364.43	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.67	8	\$3.87	0%	0%	\$860.53	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.31	5	\$49.37	0%	0%	\$4,611.09	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,735.28	5	\$288.64	25%	75%	\$35.89	3.83	3.62	VEND_CTRL-Miscellaneous-SCE-17R0-41
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,697.97	18	\$8,815.42	25%	50%	\$454.52	18.90	18.43	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	100.45	15	\$335.00	0%	0%	\$89.88	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	260.34	15	\$335.00	0%	0%	\$89.88	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	15.17	4	\$37.32	10%	50%	\$600.38	3.75	3.17	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.43	0.00	0.00	com-datacenters-7p_v5p.xlsx

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School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.43	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.43	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$5.36	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,236.60	18	\$4,231.40	0%	0%	\$299.57	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
School	Miscellaneous	Pool Pump - Timer	perBldg	New	165.03	10	\$19.59	15%	75%	\$14.92	0.16	0.15	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	New	38.21	5	\$37,813.23	15%	75%	\$9,999.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.16	0%	0%	\$4,216.24	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	85.88	7	\$423.28	0%	0%	\$745.51	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.62	7	\$423.28	0%	0%	\$745.51	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.62	7	\$423.28	0%	0%	\$745.51	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	13,492.82	15	\$1,114.41	0%	0%	\$7.89	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	184.13	15	\$1,114.41	0%	0%	\$7.89	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	833.76	6	\$37.07	1%	3%	\$8.25	0.80	0.77	ESTAR_WC-Miscellaneous-7PLN-v6-1

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School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.06	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	New	0.47	25	\$4.24	10%	25%	\$112.88	44.30	43.35	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	New	1.05	25	\$4.24	10%	25%	\$112.88	22.73	22.24	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$112.88	26.66	26.06	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	25%	\$112.88	17.68	17.29	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.69	25	\$4.24	10%	25%	\$112.88	339.21	333.29	ADVNC-AII-RSRCH-1
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$112.88	78.89	77.28	ADVNC-AII-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.05	2%	22%	\$32.65	2.20	2.08	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	New	0.16	3	\$0.05	2%	22%	\$32.65	1.13	1.07	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.05	2%	22%	\$32.65	1.32	1.25	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.05	2%	22%	\$32.65	0.88	0.83	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.05	2%	22%	\$32.65	4.21	4.09	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.05	2%	22%	\$32.65	1.30	1.23	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.05	2%	22%	\$32.65	0.63	0.56	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.05	2%	22%	\$32.65	0.95	0.80	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	New	0.10	3	\$0.24	10%	47%	\$139.89	35.27	34.23	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	New	0.23	3	\$0.24	10%	47%	\$139.89	18.10	17.56	COM_CX-HVAC-AEG-1

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School	Ventilation	Commissioning	sqft	New	0.04	3	\$0.24	10%	47%	\$139.89	21.23	20.56	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	New	0.02	3	\$0.24	10%	47%	\$139.89	4.69	4.55	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.24	10%	47%	\$139.89	225.09	220.19	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.24	10%	47%	\$139.89	52.35	50.84	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.24	10%	47%	\$139.89	61.02	57.26	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	New	0.10	3	\$0.08	0%	0%	\$44.41	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Heating	Retrocommissioning	sqft	New	0.23	3	\$0.08	0%	0%	\$44.41	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.08	0%	0%	\$44.41	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.08	0%	0%	\$44.41	0.00	0.00	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.08	0%	0%	\$44.41	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.08	0%	0%	\$44.41	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.08	0%	0%	\$44.41	0.00	0.00	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.09	10	\$0.09	0%	0%	\$135.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.10	10	\$1.12	0%	0%	\$1,369.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.03	3	\$0.24	0%	0%	\$3,004.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.05	10	\$3.24	0%	0%	\$8,123.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$8,814.54	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	New	88.84	16	\$75.53	20%	75%	\$79.33	1.34	1.28	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,179.33	25	\$1,800.67	0%	0%	\$115.24	0.00	0.00	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$367.57	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$0.84	15%	35%	\$367.57	9.85	9.54	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$367.57	0.52	0.51	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.30	20	\$0.81	45%	50%	\$445.00	5.61	5.61	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.81	45%	50%	\$445.00	-1.64	-1.59	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$445.00	-0.99	-0.96	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.01	45	\$1.70	15%	35%	\$1,197.41	-0.19	-0.19	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$1.70	15%	35%	\$1,197.41	1.80	1.74	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.03	45	\$1.70	15%	35%	\$1,197.41	1.08	1.06	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.68	30	\$37.07	48%	48%	\$274.35	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	4.82	30	\$37.07	48%	48%	\$274.35	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.30	30	\$37.07	48%	48%	\$274.35	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,651.77	10	\$914.46	15%	75%	\$17.36	2.70	2.57	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	141.24	15	\$248.07	15%	75%	\$170.75	7.96	7.59	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	347.25	15	\$263.92	15%	75%	\$73.89	1.96	1.87	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	50.17	15	\$248.07	15%	75%	\$478.64	2.23	2.12	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	11,918.13	10	\$1,796.53	15%	75%	\$18.95	3.81	3.62	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	89.75	5	\$267.96	18%	75%	\$658.06	12.60	12.26	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.30	15	\$0.05	5%	15%	\$17.02	12.07	12.11	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.72	14	\$5.25	3%	75%	\$737.14	38.77	37.01	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	18	\$0.26	15%	20%	\$128.28	3.97	3.87	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	2,052.12	15	\$189.00	13%	25%	\$9.06	4.82	4.65	VENT_PMSM-Ventilation-AEG-2016-2

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Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	739.48	15	\$1,273.23	13%	50%	\$169.37	5.46	5.27	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.11	15	\$0.01	13%	50%	\$10.23	19.17	18.52	FAN_VSD-Ventilation-MIDATL-v3.0-13
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	3%	21%	\$2,138.48	0.92	0.89	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.42	15	\$0.76	1%	7%	\$91.60	9.54	9.10	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.39	15	\$0.76	1%	7%	\$91.60	11.23	10.84	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,330.12	15	\$7,501.21	15%	30%	\$101.16	17.09	17.16	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	4,033.31	15	\$7,501.21	15%	30%	\$101.16	19.36	18.48	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	0.54	0.53	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	Existing	178.10	15	\$410.87	15%	45%	\$229.08	10.24	10.05	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	169.98	15	\$698.92	15%	75%	\$408.32	18.96	18.66	RTU_PREC-Cooling-XCELCO-2017-18-1
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	265.79	20	\$1,419.90	15%	75%	\$285.55	74.54	74.81	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	162.49	20	\$1,419.90	15%	75%	\$285.55	65.99	62.98	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.42	5	\$0.75	30%	40%	\$206.45	15.61	15.61	STAT_WIFI-AII-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.26	5	\$0.75	30%	40%	\$206.45	9.13	8.84	STAT_WIFI-AII-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.12	5	\$0.75	30%	40%	\$206.45	5.50	5.37	STAT_WIFI-AII-7PLN-v2-1

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Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	435.61	10	\$8.63	25%	65%	\$2.56	9.97	9.70	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	478.66	10	\$17.56	25%	65%	\$4.75	5.48	5.33	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	118.60	10	\$16.82	25%	65%	\$18.35	1.34	1.30	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	20%	\$7.21	6.10	5.97	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,675.99	15	\$15.38	16%	75%	\$0.91	23.37	22.74	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,785.34	4	\$75.87	25%	40%	\$11.43	15.14	14.73	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	12.71	12.36	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.81	40.46	39.35	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.36	3%	23%	\$148.90	28.53	29.55	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.35	15	\$0.60	3%	23%	\$175.49	39.95	41.38	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	431.44	15	\$56.14	1%	3%	\$14.68	1.08	1.21	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.02	15	\$65.99	1%	3%	\$140.40	0.03	0.03	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	746.22	11	\$26.48	15%	30%	\$4.40	5.09	5.07	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	76.41	16	\$1,864.95	5%	15%	\$2,396.63	3.48	3.46	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	6.38	9	\$0.65	15%	25%	\$14.41	35.50	35.32	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	205.39	8	\$56.85	15%	25%	\$42.89	18.87	18.77	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	256.82	7	\$3,486.31	15%	30%	\$2,331.68	35.39	35.21	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	57.17	12	\$50.74	0%	0%	\$103.13	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	13.71	4	\$24.51	0%	0%	\$496.05	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	76.56	15	\$347.21	0%	0%	\$469.15	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	71.46	2	\$10.74	0%	0%	\$115.85	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.81	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	31.71	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	240.46	15	\$305.13	0%	0%	\$131.27	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	962.99	15	\$539.09	0%	0%	\$57.91	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	2,023.26	10	\$449.00	0%	0%	\$29.82	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	128.77	16	\$153.90	0%	0%	\$119.79	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	46.31	15	\$135.00	0%	0%	\$303.14	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	490.86	16	\$105.92	0%	0%	\$23.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	377.87	10	\$521.11	0%	0%	\$198.02	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	229.18	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	409.91	12	\$605.15	0%	0%	\$175.29	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	25.52	8	\$15.90	0%	0%	\$96.66	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.63	8	\$3.87	0%	0%	\$228.23	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	9.25	5	\$49.37	0%	0%	\$1,207.68	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,848.78	5	\$288.64	25%	75%	\$35.42	11.93	11.71	VEND_CTRL-Miscellaneous-SCE-17R0-35
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,101.94	18	\$8,815.42	25%	50%	\$373.24	9.42	9.19	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	177.93	15	\$335.00	15%	75%	\$119.70	48.35	48.53	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	103.03	15	\$335.00	15%	75%	\$119.70	38.08	36.34	AEG - BEST

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Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.93	4	\$37.32	10%	50%	\$1,497.68	2.81	2.30	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$23.42	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,551.35	18	\$4,231.40	0%	0%	\$147.60	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	247.74	10	\$19.59	15%	75%	\$10.27	0.99	0.97	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	111.96	5	\$63,022.06	15%	75%	\$9,999.00	0.18	0.17	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	perBldg	Existing	739.36	10	\$27,488.34	0%	0%	\$4,811.39	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	446.04	7	\$423.28	0%	0%	\$142.81	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	27.38	7	\$423.28	0%	0%	\$142.81	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	27.38	7	\$423.28	0%	0%	\$142.81	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	70,081.97	15	\$1,114.41	0%	0%	\$1.55	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,437.58	15	\$1,114.41	0%	0%	\$1.55	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,660.06	6	\$37.07	1%	3%	\$1.88	2.01	1.94	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.18	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.24	0%	0%	\$98.28	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.24	0%	0%	\$98.28	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$98.28	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.24	0%	0%	\$98.28	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.24	0%	0%	\$98.28	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.45	25	\$4.24	0%	0%	\$98.28	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.08	0%	0%	\$44.25	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.08	3	\$0.08	0%	0%	\$44.25	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.08	0%	0%	\$44.25	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.13	3	\$0.08	0%	0%	\$44.25	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.08	0%	0%	\$44.25	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.08	0%	0%	\$44.25	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.08	0%	0%	\$44.25	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.08	0%	0%	\$44.25	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.33	0%	0%	\$168.91	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	Existing	0.11	3	\$0.33	0%	0%	\$168.91	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.33	0%	0%	\$168.91	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	Existing	0.06	3	\$0.33	0%	0%	\$168.91	0.00	0.00	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.15	3	\$0.33	0%	0%	\$168.91	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.33	0%	0%	\$168.91	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.33	0%	0%	\$168.91	0.00	0.00	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.18	3	\$0.11	15%	76%	\$53.62	44.16	44.33	COM_RCX-HVAC-AEG-1
Lodging	Heating	Retrocommissioning	sqft	Existing	0.11	3	\$0.11	15%	76%	\$53.62	25.83	24.65	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.11	15%	76%	\$53.62	15.56	15.03	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.06	3	\$0.11	15%	76%	\$53.62	8.51	8.28	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.11	15%	76%	\$53.62	34.59	38.02	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.11	15%	76%	\$53.62	24.65	24.53	COM_RCX-Lighting-AEG-1

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Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$0.11	15%	76%	\$53.62	17.30	15.40	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$125.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.17	10	\$1.12	0%	0%	\$830.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.24	0%	0%	\$1,820.81	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.08	10	\$3.24	0%	0%	\$4,922.26	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$5,341.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	Existing	80.95	16	\$75.53	20%	75%	\$87.06	0.62	0.58	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,468.69	25	\$4,050.74	0%	75%	\$127.41	10.55	10.24	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,674.66	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$1,674.66	1.71	1.67	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,674.66	0.08	0.08	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.81	45%	50%	\$1,808.60	0.81	0.79	Building Energy Simulation Tool

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Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$1,808.60	-0.28	-0.28	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$1,808.60	-0.17	-0.17	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$9,999.00	0.12	0.12	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.07	0.07	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.11	30	\$37.07	66%	66%	\$299.09	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	4.50	30	\$37.07	66%	66%	\$299.09	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.19	30	\$37.07	66%	66%	\$299.09	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,771.31	10	\$914.46	15%	75%	\$19.92	0.48	0.45	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	122.55	15	\$248.07	15%	75%	\$195.96	1.76	1.68	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	301.29	15	\$263.92	15%	75%	\$84.80	0.43	0.41	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	47.19	15	\$248.07	15%	75%	\$508.83	0.53	0.51	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	10,128.81	10	\$1,796.53	15%	75%	\$22.30	0.66	0.62	AEG-BEST

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Lodging	Cooling	HVAC - Economizer	HP cool	New	85.32	5	\$267.96	18%	75%	\$684.46	1.47	1.40	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.26	15	\$0.05	10%	15%	\$19.21	1.39	1.33	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.67	14	\$5.25	6%	75%	\$787.47	8.55	8.16	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.16	18	\$0.26	15%	20%	\$139.16	1.62	1.58	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	2,052.32	15	\$189.00	19%	25%	\$8.91	0.54	0.51	VENT_PMSM-Ventilation-AEG-2016-2
Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	739.56	15	\$1,273.23	19%	50%	\$166.66	1.07	1.02	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.10	15	\$0.01	19%	50%	\$10.07	3.75	3.58	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	3%	21%	\$2,319.92	0.22	0.21	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.39	15	\$0.76	1%	7%	\$99.40	2.22	2.13	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.35	15	\$0.76	1%	7%	\$99.40	2.64	2.52	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,812.98	15	\$7,501.21	15%	30%	\$110.70	3.94	3.77	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	3,764.11	15	\$7,501.21	15%	30%	\$110.70	4.59	4.38	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	New	8.33	3	\$33.20	15%	45%	\$1,360.42	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	New	170.64	15	\$410.87	15%	45%	\$235.96	4.21	4.09	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	162.86	15	\$698.92	15%	75%	\$420.58	9.42	9.20	RTU_PREC-Cooling-XCELCO-2017-18-1

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Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	210.52	20	\$1,419.90	15%	75%	\$326.94	20.66	19.82	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	150.45	20	\$1,419.90	15%	75%	\$326.94	19.47	18.67	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.36	5	\$0.75	30%	40%	\$226.89	2.01	1.93	STAT_WIFI-All-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.25	5	\$0.75	30%	40%	\$226.89	1.21	1.16	STAT_WIFI-All-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.11	5	\$0.75	30%	40%	\$226.89	0.73	0.70	STAT_WIFI-All-7PLN-v2-1
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	416.36	10	\$8.63	25%	65%	\$2.61	1.69	1.60	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	457.51	10	\$17.56	25%	65%	\$4.82	0.93	0.88	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	113.36	10	\$16.82	25%	65%	\$18.66	0.27	0.26	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	20%	\$7.33	2.04	1.98	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,601.94	15	\$15.38	1%	75%	\$0.93	7.34	7.01	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	1,706.45	4	\$75.87	25%	40%	\$11.62	1.50	1.41	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	0.67	0.63	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.59	10.44	9.98	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.23	15	\$0.36	11%	23%	\$154.47	14.50	14.76	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.33	15	\$0.60	11%	23%	\$182.05	20.30	20.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	402.80	15	\$56.14	1%	3%	\$15.07	0.23	0.24	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.59	15	\$65.99	1%	3%	\$135.68	0.01	0.01	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	690.88	11	\$26.48	15%	30%	\$4.52	1.09	1.04	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	70.75	16	\$1,864.95	5%	15%	\$2,462.40	0.90	0.86	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	5.94	9	\$0.65	15%	25%	\$14.82	6.68	6.36	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	191.45	8	\$56.85	15%	25%	\$44.09	3.28	3.12	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	239.39	7	\$3,486.31	15%	30%	\$2,396.99	5.57	5.29	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	53.82	12	\$50.74	0%	0%	\$104.73	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	12.81	4	\$24.51	0%	0%	\$506.99	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	72.66	15	\$347.21	0%	0%	\$471.35	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	59.69	2	\$10.74	0%	0%	\$133.37	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.71	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	30.09	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

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Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	228.23	15	\$305.13	0%	0%	\$131.88	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	913.99	15	\$539.09	0%	0%	\$58.18	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	1,920.32	10	\$449.00	0%	0%	\$29.96	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	121.80	16	\$153.90	0%	0%	\$120.95	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	43.80	15	\$135.00	0%	0%	\$306.07	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	443.50	16	\$105.92	0%	0%	\$24.28	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	341.41	10	\$521.11	0%	0%	\$209.04	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	6.84	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	389.05	12	\$5,648.09	0%	0%	\$1,643.64	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	24.25	8	\$15.90	0%	0%	\$97.06	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.50	8	\$3.87	0%	0%	\$229.19	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	8.67	5	\$49.37	0%	0%	\$1,228.07	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,726.13	5	\$288.64	25%	75%	\$36.08	1.39	1.31	VEND_CTRL-Miscellaneous-SCE-17R0-41
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,906.70	18	\$8,815.42	25%	50%	\$404.91	3.84	3.75	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	142.69	15	\$335.00	15%	75%	\$135.18	13.49	12.94	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	97.21	15	\$335.00	15%	75%	\$135.18	11.38	10.91	AEG - BEST
Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	5.83	4	\$37.32	10%	50%	\$1,539.71	0.27	0.22	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$16.40	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,314.37	18	\$4,231.40	0%	0%	\$160.12	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	238.47	10	\$19.59	15%	75%	\$10.33	0.31	0.30	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	New	110.43	5	\$63,022.06	15%	75%	\$9,999.00	0.02	0.02	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.51	0%	0%	\$4,550.05	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	426.33	7	\$423.28	0%	0%	\$145.03	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	26.18	7	\$423.28	0%	0%	\$145.03	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	26.18	7	\$423.28	0%	0%	\$145.03	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	66,985.30	15	\$1,114.41	0%	0%	\$1.58	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,330.35	15	\$1,114.41	0%	0%	\$1.58	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,660.06	6	\$37.07	1%	3%	\$1.88	0.38	0.37	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.16	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.72	25	\$4.24	10%	25%	\$94.37	15.18	14.85	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.50	25	\$4.24	10%	25%	\$94.37	9.12	8.91	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$94.37	5.51	5.39	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.80	25	\$4.24	10%	25%	\$94.37	9.69	9.47	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.77	25	\$4.24	10%	25%	\$94.37	62.37	63.16	ADVNC-AII-RSRCH-1

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Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.46	25	\$4.24	10%	25%	\$94.37	33.29	32.59	ADVNC-All-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.06	0%	0%	\$38.82	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.06	0%	0%	\$38.82	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.06	0%	0%	\$38.82	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.06	0%	0%	\$38.82	0.00	0.00	COM_SEM-Water Heating-AEG-1
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.06	0%	0%	\$38.82	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.06	0%	0%	\$38.82	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.06	0%	0%	\$38.82	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.06	0%	0%	\$38.82	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	New	0.15	3	\$0.27	15%	76%	\$146.50	19.84	19.24	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	New	0.11	3	\$0.27	15%	76%	\$146.50	11.91	11.55	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	New	0.05	3	\$0.27	15%	76%	\$146.50	7.21	6.98	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	New	0.06	3	\$0.27	15%	76%	\$146.50	4.22	4.09	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.27	15%	76%	\$146.50	67.93	69.42	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$0.27	15%	76%	\$146.50	36.25	35.18	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	New	0.05	3	\$0.27	15%	76%	\$146.50	25.09	23.35	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.09	0%	0%	\$46.51	0.00	0.00	COM_RCX-HVAC-AEG-1

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Lodging	Heating	Retrocommissioning	sqft	New	0.11	3	\$0.09	0%	0%	\$46.51	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.09	0%	0%	\$46.51	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	New	0.06	3	\$0.09	0%	0%	\$46.51	0.00	0.00	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.09	0%	0%	\$46.51	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.09	0%	0%	\$46.51	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.05	3	\$0.09	0%	0%	\$46.51	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$129.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.16	10	\$1.12	0%	0%	\$855.68	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.04	3	\$0.24	0%	0%	\$1,876.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.08	10	\$3.24	0%	0%	\$5,073.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$5,505.70	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	New	80.95	16	\$75.53	20%	75%	\$87.06	0.13	0.13	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,706.00	25	\$4,131.67	0%	75%	\$115.24	5.38	5.25	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.21	45	\$0.84	15%	35%	\$82.85	40.63	40.15	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.44	45	\$0.84	15%	35%	\$82.85	30.14	29.18	Building Energy Simulation Tool

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Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$82.85	17.40	16.95	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.08	20	\$0.86	15%	35%	\$727.88	15.84	15.65	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	35%	\$727.88	1.27	1.23	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$727.88	0.74	0.72	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.28	20	\$0.81	45%	50%	\$9,999.00	13.54	13.38	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.29	20	\$0.81	45%	50%	\$9,999.00	-5.02	-4.86	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.81	45%	50%	\$9,999.00	-2.90	-2.83	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.02	45	\$1.70	15%	35%	\$34.40	0.62	0.62	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.07	45	\$1.70	15%	35%	\$34.40	40.18	38.91	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.12	45	\$1.70	15%	35%	\$34.40	23.20	22.60	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	13.28	18	\$0.59	15%	25%	\$1.51	2.55	2.52	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	20.53	18	\$0.59	15%	25%	\$1.51	1.42	1.37	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.78	18	\$0.59	15%	25%	\$1.51	0.82	0.80	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.56	30	\$37.07	48%	48%	\$87.90	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	24.11	30	\$37.07	48%	48%	\$87.90	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.53	30	\$37.07	48%	48%	\$87.90	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	143.35	5	\$267.96	18%	75%	\$413.68	108.96	106.53	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.28	15	\$0.05	5%	15%	\$18.04	29.36	28.93	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.38	14	\$5.25	3%	75%	\$72.22	119.65	114.24	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.04	18	\$0.26	15%	20%	\$511.18	11.63	11.33	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	327.18	15	\$189.00	13%	25%	\$56.75	14.24	13.73	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	117.90	15	\$1,273.23	13%	50%	\$1,060.92	16.13	15.56	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$0.02	13%	50%	\$64.09	56.70	54.67	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	9%	25%	\$8,521.85	2.37	2.29	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.30	15	\$0.76	3%	8%	\$52.99	25.71	24.55	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.10	15	\$0.76	3%	8%	\$52.99	29.00	27.96	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,085.72	15	\$7,501.21	15%	75%	\$47.53	166.38	163.96	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,368.47	15	\$7,501.21	15%	75%	\$47.53	239.01	228.20	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	4.69	4.59	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	Existing	220.83	15	\$410.87	15%	45%	\$184.76	109.20	107.20	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	210.75	15	\$698.92	15%	75%	\$329.32	201.36	198.21	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	329.55	20	\$1,958.49	15%	25%	\$167.26	3.55	3.57	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	662.25	20	\$1,958.49	15%	25%	\$167.26	28.55	27.25	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	30%	40%	\$133.59	37.67	37.22	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.81	5	\$0.75	30%	40%	\$133.59	27.94	27.05	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	30%	40%	\$133.59	16.13	15.72	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	65.32	10	\$8.63	25%	65%	\$17.10	9.15	8.90	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	71.77	10	\$17.56	25%	65%	\$31.66	5.03	4.89	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	17.78	10	\$16.82	25%	65%	\$122.41	1.23	1.20	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	20%	\$7.21	5.54	5.43	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	251.26	15	\$15.38	16%	75%	\$6.10	21.41	20.82	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	267.70	4	\$75.87	25%	40%	\$76.22	13.87	13.49	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	11.64	11.32	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.81	37.06	36.05	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.28	15	\$0.36	3%	23%	\$129.23	397.79	397.17	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.40	15	\$0.60	3%	23%	\$152.30	556.91	556.03	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	604.33	15	\$56.14	1%	3%	\$9.60	10.24	10.41	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.10	15	\$65.99	1%	3%	\$128.40	0.58	0.59	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	460.85	11	\$26.48	15%	30%	\$7.14	36.74	36.83	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	47.19	16	\$1,864.95	5%	15%	\$3,890.68	25.08	25.14	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.23	9	\$0.65	15%	25%	\$75.45	108.72	109.57	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	104.39	8	\$56.85	15%	25%	\$85.06	57.79	58.24	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	130.53	7	\$3,486.31	15%	30%	\$4,624.33	108.39	109.23	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	129.41	12	\$50.74	0%	0%	\$45.51	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1

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Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	38.03	4	\$24.51	0%	0%	\$185.31	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	163.52	15	\$347.21	0%	0%	\$230.07	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	154.03	2	\$10.74	0%	0%	\$52.96	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	3.86	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	67.72	15	\$5,552.98	0%	0%	\$8,884.56	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	513.61	15	\$305.13	0%	0%	\$64.37	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	2,056.85	15	\$539.09	0%	0%	\$28.40	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,321.48	10	\$449.00	0%	0%	\$14.62	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	292.48	16	\$153.90	0%	0%	\$55.23	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	105.18	15	\$135.00	0%	0%	\$139.76	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,582.24	16	\$105.92	0%	0%	\$8.31	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,218.03	10	\$521.11	0%	0%	\$71.53	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	494.01	8	\$18,135.52	0%	0%	\$8,425.61	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1

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Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	875.53	12	\$605.15	0%	0%	\$85.96	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	57.76	8	\$15.90	0%	0%	\$42.66	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	5.95	8	\$3.87	0%	0%	\$100.73	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	20.93	5	\$49.37	0%	0%	\$533.03	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,677.91	5	\$288.64	25%	75%	\$38.92	16.04	15.68	VEND_CTRL-Miscellaneous-SCE-17R0-49
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	526.77	18	\$8,815.42	25%	50%	\$1,487.37	27.63	26.93	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	159.95	15	\$335.00	0%	0%	\$70.39	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	309.78	15	\$335.00	0%	0%	\$70.39	0.00	0.00	AEG - BEST
Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	8.08	4	\$37.32	10%	50%	\$1,065.89	47.63	37.53	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.05	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$9.86	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,278.79	18	\$4,231.40	0%	0%	\$294.09	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.73	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	66.88	7	\$423.28	0%	0%	\$1,068.47	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$1,068.47	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$1,068.47	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	10,508.54	15	\$1,114.41	0%	0%	\$10.57	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$10.57	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,546.21	6	\$37.07	1%	3%	\$1.51	14.56	14.06	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.15	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.24	0%	0%	\$151.55	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	0.92	25	\$4.24	0%	0%	\$151.55	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.04	25	\$4.24	0%	0%	\$151.55	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.06	25	\$4.24	0%	0%	\$151.55	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$151.55	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.24	0%	0%	\$151.55	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.12	3	\$0.05	3%	11%	\$35.41	10.18	10.03	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.05	3%	11%	\$35.41	7.55	7.21	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.05	3%	11%	\$35.41	4.36	4.20	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.05	3%	11%	\$35.41	2.22	2.15	COM_SEM-Water Heating-AEG-1
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.05	3%	11%	\$35.41	37.16	37.60	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.05	3%	11%	\$35.41	8.58	8.65	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.05	3%	11%	\$35.41	3.56	2.38	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.05	3%	11%	\$35.41	6.24	4.91	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	Existing	0.17	3	\$0.35	0%	0%	\$176.24	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	Existing	0.35	3	\$0.35	0%	0%	\$176.24	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	Existing	0.01	3	\$0.35	0%	0%	\$176.24	0.00	0.00	COM_CX-HVAC-AEG-1

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Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.35	0%	0%	\$176.24	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.35	0%	0%	\$176.24	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.35	0%	0%	\$176.24	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.35	0%	0%	\$176.24	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.17	3	\$0.11	11%	73%	\$55.95	109.22	107.64	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.35	3	\$0.11	11%	73%	\$55.95	81.01	77.34	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.01	3	\$0.11	11%	73%	\$55.95	46.77	45.09	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.11	11%	73%	\$55.95	7.92	7.71	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.11	11%	73%	\$55.95	332.29	336.20	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.11	11%	73%	\$55.95	76.73	77.33	COM_RCX-Lighting-AEG-1
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.11	11%	73%	\$55.95	63.59	42.62	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$164.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.03	10	\$1.12	0%	0%	\$3,202.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$7,025.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	Existing	141.98	16	\$75.53	20%	75%	\$49.64	6.36	6.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	7,112.10	25	\$11,669.83	0%	0%	\$127.41	0.00	0.00	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$218.97	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.25	45	\$0.84	15%	50%	\$218.97	14.57	14.22	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$218.97	0.20	0.19	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.08	20	\$0.86	15%	25%	\$736.46	4.05	3.96	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.86	15%	25%	\$736.46	0.24	0.23	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$736.46	0.18	0.17	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.18	20	\$0.81	45%	50%	\$9,999.00	4.30	4.20	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.17	20	\$0.81	45%	50%	\$9,999.00	-1.39	-1.35	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$9,999.00	-1.03	-1.01	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$434.84	-0.31	-0.30	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.25	45	\$1.70	15%	50%	\$434.84	2.78	2.71	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$434.84	2.07	2.02	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	15.67	18	\$0.59	15%	25%	\$1.99	1.48	1.44	Building Energy Simulation Tool

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Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	9.86	18	\$0.59	15%	25%	\$1.99	0.32	0.31	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.48	18	\$0.59	15%	25%	\$1.99	0.24	0.23	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.51	30	\$37.07	66%	66%	\$149.91	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	13.66	30	\$37.07	66%	66%	\$149.91	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.38	30	\$37.07	66%	66%	\$149.91	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	88.38	5	\$267.96	18%	75%	\$662.08	8.86	8.43	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.18	15	\$0.05	10%	15%	\$27.97	2.60	2.50	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.18	14	\$5.25	6%	75%	\$126.70	17.19	16.41	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.03	18	\$0.26	15%	20%	\$709.45	3.97	3.88	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	266.16	15	\$189.00	19%	25%	\$68.74	1.33	1.27	VENT_PMSM-Ventilation-AEG-2016-2

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Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	95.91	15	\$1,273.23	19%	50%	\$1,285.10	2.64	2.52	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$0.02	19%	50%	\$77.63	9.27	8.85	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	9%	25%	\$9,999.00	0.47	0.44	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.73	15	\$0.76	3%	8%	\$92.64	3.91	3.73	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.07	15	\$0.76	3%	8%	\$92.64	5.69	5.43	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,944.00	15	\$7,501.21	15%	75%	\$81.30	29.52	28.31	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,007.49	15	\$7,501.21	15%	75%	\$81.30	36.89	35.23	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	New	5.30	3	\$33.20	15%	45%	\$2,140.21	0.18	0.18	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	New	134.47	15	\$410.87	15%	45%	\$299.39	30.66	29.74	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	128.34	15	\$698.92	15%	75%	\$533.64	68.52	66.90	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	257.28	20	\$1,958.49	15%	25%	\$250.68	1.04	1.00	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	392.06	20	\$1,958.49	15%	25%	\$250.68	5.77	5.53	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.25	5	\$0.75	30%	40%	\$223.59	3.74	3.60	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.46	5	\$0.75	30%	40%	\$223.59	2.41	2.31	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.02	5	\$0.75	30%	40%	\$223.59	1.80	1.73	STAT_WIFI-AII-7PLN-v2-1

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Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	62.43	10	\$8.63	25%	65%	\$17.38	1.66	1.57	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	68.60	10	\$17.56	25%	65%	\$32.18	0.91	0.86	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	17.00	10	\$16.82	25%	65%	\$124.42	0.27	0.25	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	20%	\$7.33	1.99	1.93	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	240.16	15	\$15.38	1%	75%	\$6.20	7.19	6.86	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	255.88	4	\$75.87	25%	40%	\$77.47	1.47	1.38	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	0.66	0.62	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.59	10.22	9.77	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.26	15	\$0.36	11%	23%	\$133.48	220.06	214.72	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.37	15	\$0.60	11%	23%	\$157.31	308.08	300.61	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	559.37	15	\$56.14	1%	3%	\$9.90	2.33	2.24	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.59	15	\$65.99	1%	3%	\$121.54	0.13	0.13	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	426.67	11	\$26.48	15%	30%	\$7.34	8.43	8.10	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	43.69	16	\$1,864.95	5%	15%	\$4,000.16	6.91	6.67	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.15	9	\$0.65	15%	25%	\$77.50	21.89	21.15	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	97.38	8	\$56.85	15%	25%	\$87.37	10.75	10.38	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	121.77	7	\$3,486.31	15%	30%	\$4,749.91	18.26	17.61	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	122.07	12	\$50.74	0%	0%	\$46.18	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	35.07	4	\$24.51	0%	0%	\$191.46	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	155.91	15	\$347.21	0%	0%	\$229.37	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	130.18	2	\$10.74	0%	0%	\$60.01	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	3.68	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	64.57	15	\$5,552.98	0%	0%	\$8,857.59	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	489.68	15	\$305.13	0%	0%	\$64.18	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,961.03	15	\$539.09	0%	0%	\$28.31	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	4,120.17	10	\$449.00	0%	0%	\$14.58	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	275.26	16	\$153.90	0%	0%	\$56.52	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	98.99	15	\$135.00	0%	0%	\$143.04	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,402.45	16	\$105.92	0%	0%	\$8.94	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,079.62	10	\$521.11	0%	0%	\$76.96	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	14.91	8	\$647.70	0%	0%	\$9,547.57	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	834.74	12	\$5,648.09	0%	0%	\$799.84	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	54.99	8	\$15.90	0%	0%	\$42.80	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	5.67	8	\$3.87	0%	0%	\$101.05	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	19.67	5	\$49.37	0%	0%	\$541.49	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,575.24	5	\$288.64	25%	75%	\$39.53	1.75	1.65	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	374.00	18	\$8,815.42	25%	50%	\$2,064.27	9.44	9.21	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	126.43	15	\$335.00	0%	0%	\$102.32	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	190.50	15	\$335.00	0%	0%	\$102.32	0.00	0.00	AEG - BEST

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Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	7.92	4	\$37.32	10%	50%	\$1,112.25	4.71	3.78	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.98	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.98	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.98	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$4.21	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	907.94	18	\$4,231.40	0%	0%	\$408.16	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.66	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	63.93	7	\$423.28	0%	0%	\$1,086.00	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$1,086.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$1,086.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	10,044.20	15	\$1,114.41	0%	0%	\$10.74	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$10.74	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,546.21	6	\$37.07	1%	3%	\$1.51	2.97	2.87	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.13	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.50	25	\$4.24	10%	15%	\$147.77	9.33	9.13	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	New	0.92	25	\$4.24	10%	15%	\$147.77	6.02	5.88	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.04	25	\$4.24	10%	15%	\$147.77	4.49	4.39	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.06	25	\$4.24	10%	15%	\$147.77	3.12	3.05	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	15%	\$147.77	206.64	202.90	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.24	10%	15%	\$147.77	35.79	35.26	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.08	3	\$0.02	3%	11%	\$23.54	0.55	0.52	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	New	0.14	3	\$0.02	3%	11%	\$23.54	0.36	0.33	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.02	3%	11%	\$23.54	0.27	0.25	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.02	3%	11%	\$23.54	0.18	0.17	COM_SEM-Water Heating-AEG-1

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Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.02	3%	11%	\$23.54	3.05	2.92	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.02	3%	11%	\$23.54	0.70	0.68	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.02	3%	11%	\$23.54	0.26	0.17	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.02	3%	11%	\$23.54	0.48	0.38	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	New	0.11	3	\$0.15	11%	73%	\$112.83	37.28	36.21	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	New	0.20	3	\$0.15	11%	73%	\$112.83	24.05	23.30	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.15	11%	73%	\$112.83	17.94	17.38	COM_CX-HVAC-AEG-1
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.15	11%	73%	\$112.83	4.15	4.02	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.15	11%	73%	\$112.83	688.24	671.32	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.15	11%	73%	\$112.83	119.21	116.71	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.15	11%	73%	\$112.83	26.45	22.02	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	New	0.11	3	\$0.05	0%	0%	\$35.82	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.05	0%	0%	\$35.82	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.05	0%	0%	\$35.82	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.05	0%	0%	\$35.82	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.05	0%	0%	\$35.82	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.05	0%	0%	\$35.82	0.00	0.00	COM_RCX-Lighting-AEG-1

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Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.05	0%	0%	\$35.82	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$169.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.03	10	\$1.12	0%	0%	\$3,539.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$7,762.75	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	New	141.98	16	\$75.53	20%	75%	\$49.64	1.46	1.39	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	7,730.37	25	\$11,803.14	0%	0%	\$115.24	0.00	0.00	WHP Analysis
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$0.84	15%	35%	\$92.17	15.20	14.92	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$0.84	15%	35%	\$92.17	4.19	4.06	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$92.17	11.25	10.96	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.07	20	\$0.86	15%	50%	\$844.49	10.37	10.18	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	50%	\$844.49	0.31	0.30	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$844.49	0.83	0.81	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.24	20	\$0.81	45%	50%	\$9,999.00	5.07	4.97	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$9,999.00	-0.70	-0.68	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.81	45%	50%	\$9,999.00	-1.88	-1.83	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$1.70	15%	35%	\$37.32	0.23	0.23	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.59	45	\$1.70	15%	35%	\$37.32	5.59	5.42	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.36	45	\$1.70	15%	35%	\$37.32	15.00	14.62	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	11.15	18	\$0.59	15%	50%	\$1.69	3.35	3.28	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	17.31	18	\$0.59	15%	50%	\$1.69	0.69	0.67	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.40	18	\$0.59	15%	50%	\$1.69	1.85	1.80	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.67	30	\$37.07	48%	48%	\$99.77	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	20.33	30	\$37.07	48%	48%	\$99.77	0.00	0.00	WND_FLM-Heating-7PLN-v3-2

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Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.62	30	\$37.07	48%	48%	\$99.77	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,036.19	10	\$914.46	15%	75%	\$19.26	7.81	7.50	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	241.13	15	\$248.07	15%	75%	\$100.72	43.39	41.68	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	878.09	15	\$263.92	15%	75%	\$29.43	15.80	15.18	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	44.14	15	\$248.07	15%	75%	\$544.05	0.81	0.77	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	27,523.17	10	\$1,796.53	15%	75%	\$8.21	3.63	3.44	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	120.43	5	\$267.96	18%	75%	\$489.34	44.30	42.97	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.24	15	\$0.05	5%	15%	\$21.29	10.99	10.71	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	6.23	14	\$5.25	3%	75%	\$85.86	16.64	15.92	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.26	15%	20%	\$167.07	7.52	7.33	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,001.04	15	\$189.00	13%	25%	\$18.55	9.21	8.88	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	360.73	15	\$1,273.23	13%	50%	\$346.75	10.43	10.06	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.08	15	\$0.02	13%	50%	\$20.95	36.66	35.35	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	9%	25%	\$2,785.29	1.53	1.48	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.10	15	\$0.76	3%	8%	\$53.32	3.58	3.42	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.30	15	\$0.76	3%	8%	\$53.32	18.75	18.08	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,590.43	15	\$7,501.21	15%	15%	\$56.43	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,429.36	15	\$7,501.21	15%	15%	\$56.43	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	1.22	1.19	RTU_MNT-Cooling-PGE-R2-1
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	Existing	191.30	15	\$410.87	15%	45%	\$213.28	24.51	24.06	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	182.57	15	\$698.92	15%	75%	\$380.15	45.19	44.48	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	285.48	20	\$1,958.49	15%	25%	\$196.20	0.73	0.73	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	560.30	20	\$1,958.49	15%	25%	\$196.20	3.53	3.37	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.33	5	\$0.75	30%	40%	\$148.63	14.09	13.83	STAT_WIFI-All-7PLN-v2-1

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Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.68	5	\$0.75	30%	40%	\$148.63	3.88	3.77	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.09	5	\$0.75	30%	40%	\$148.63	10.43	10.16	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	113.22	10	\$8.63	25%	65%	\$9.86	3.40	3.31	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	124.41	10	\$17.56	25%	65%	\$18.26	1.87	1.82	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	30.83	10	\$16.82	25%	65%	\$70.62	0.46	0.44	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	20%	\$7.21	2.06	2.02	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	435.52	15	\$15.38	16%	75%	\$3.52	7.96	7.74	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	464.03	4	\$75.87	25%	40%	\$43.97	5.16	5.02	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	4.33	4.21	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.81	13.78	13.41	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.28	15	\$0.36	13%	38%	\$129.23	109.33	109.16	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.40	15	\$0.60	13%	38%	\$152.30	153.06	152.82	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	604.33	15	\$56.14	1%	3%	\$9.60	2.16	2.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.10	15	\$65.99	1%	3%	\$128.40	0.12	0.12	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	460.85	11	\$26.48	15%	30%	\$7.14	7.77	7.78	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	47.19	16	\$1,864.95	5%	15%	\$3,890.68	5.30	5.31	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.41	9	\$0.65	15%	25%	\$38.43	22.98	23.16	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	104.39	8	\$56.85	15%	25%	\$85.06	12.21	12.31	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	130.53	7	\$3,486.31	15%	30%	\$4,624.33	22.91	23.09	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	935.17	12	\$50.74	0%	0%	\$6.03	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	3,691.39	4	\$24.51	0%	0%	\$1.83	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	3,933.58	15	\$347.21	0%	0%	\$8.68	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	2,147.72	2	\$10.74	0%	0%	\$2.45	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	92.82	15	\$508.61	0%	0%	\$538.61	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1,629.10	15	\$5,552.98	0%	0%	\$335.05	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	12,354.75	15	\$305.13	5%	25%	\$2.43	361.83	350.91	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	49,477.42	15	\$539.09	0%	0%	\$1.07	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	103,952.98	10	\$449.00	0%	0%	\$0.55	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	10,993.39	16	\$153.90	5%	25%	\$1.35	89.57	88.60	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	3,953.39	15	\$135.00	0%	0%	\$3.40	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	111,698.75	16	\$105.92	0%	0%	\$0.09	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	85,986.85	10	\$521.11	0%	0%	\$0.79	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	20,664.06	8	\$18,135.52	0%	0%	\$129.87	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	21,060.76	12	\$605.15	0%	0%	\$3.24	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	416.10	8	\$15.90	0%	0%	\$5.66	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6

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Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	42.87	8	\$3.87	0%	0%	\$13.36	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	150.69	5	\$49.37	0%	0%	\$70.68	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,089.79	5	\$288.64	25%	75%	\$57.14	111.49	105.82	VEND_CTRL-Miscellaneous-SCE-17R0-50
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,611.70	18	\$8,815.42	25%	50%	\$486.13	17.87	17.41	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	138.56	15	\$335.00	0%	0%	\$82.33	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	263.16	15	\$335.00	0%	0%	\$82.33	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.93	4	\$37.32	10%	50%	\$1,452.16	7.39	5.82	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.08	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.08	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.08	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$9.29	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,912.58	18	\$4,231.40	0%	0%	\$96.12	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.75	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	115.93	7	\$423.28	0%	0%	\$616.42	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$616.42	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$616.42	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	18,215.10	15	\$1,114.41	0%	0%	\$6.10	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$6.10	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,669.89	6	\$37.07	1%	3%	\$1.87	2.48	2.40	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.12	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.42	25	\$4.24	0%	0%	\$160.66	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	0.75	25	\$4.24	0%	0%	\$160.66	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.24	0%	0%	\$160.66	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.24	0%	0%	\$160.66	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$160.66	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.24	0%	0%	\$160.66	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.10	3	\$0.26	3%	11%	\$74.28	3.81	3.71	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.26	3%	11%	\$74.28	1.05	1.00	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.26	3%	11%	\$74.28	2.82	2.72	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.26	3%	11%	\$74.28	0.82	0.80	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.26	3%	11%	\$74.28	7.85	7.95	COM_SEM-Lighting-AEG-1

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Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.26	3%	11%	\$74.28	1.81	1.83	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.69	3	\$0.26	3%	11%	\$74.28	75.87	66.25	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.26	3%	11%	\$74.28	0.97	0.76	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.14	3	\$0.29	0%	0%	\$43.26	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.29	3	\$0.29	0%	0%	\$43.26	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.29	0%	0%	\$43.26	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.29	0%	0%	\$43.26	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.29	0%	0%	\$43.26	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.29	0%	0%	\$43.26	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.60	3	\$0.29	0%	0%	\$43.26	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.14	3	\$0.09	11%	73%	\$13.73	40.87	39.83	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.29	3	\$0.09	11%	73%	\$13.73	11.26	10.78	COM_RCX-HVAC-AEG-1

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Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.09	11%	73%	\$13.73	30.24	29.16	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.09	11%	73%	\$13.73	2.95	2.87	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.09	11%	73%	\$13.73	70.23	71.05	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.09	11%	73%	\$13.73	16.22	16.34	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.60	3	\$0.09	11%	73%	\$13.73	1,356.94	1,184.89	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$164.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	4.95	10	\$1.12	0%	0%	\$26.96	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.28	3	\$0.24	0%	0%	\$59.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	2.40	10	\$3.24	0%	0%	\$159.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.48	10	\$0.70	0%	0%	\$173.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	Existing	198.02	16	\$75.53	20%	75%	\$35.59	1.88	1.78	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	5,141.47	25	\$8,436.35	0%	0%	\$127.41	0.00	0.00	WHP Analysis

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Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$269.54	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.20	45	\$0.84	15%	50%	\$269.54	1.95	1.91	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$269.54	0.13	0.12	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.07	20	\$0.86	15%	50%	\$862.27	5.25	5.12	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.86	15%	50%	\$862.27	0.11	0.11	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$862.27	0.40	0.39	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.81	45%	50%	\$9,999.00	1.59	1.56	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.13	20	\$0.81	45%	50%	\$9,999.00	-0.19	-0.18	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.67	-0.65	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$474.00	-0.11	-0.11	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.20	45	\$1.70	15%	50%	\$474.00	0.37	0.36	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$474.00	1.34	1.31	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	13.17	18	\$0.59	15%	50%	\$2.28	1.92	1.87	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	7.99	18	\$0.59	15%	50%	\$2.28	0.15	0.15	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.47	18	\$0.59	15%	50%	\$2.28	0.54	0.53	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.94	30	\$37.07	66%	66%	\$173.09	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	11.07	30	\$37.07	66%	66%	\$173.09	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.17	30	\$37.07	66%	66%	\$173.09	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,826.01	10	\$914.46	15%	75%	\$30.05	1.09	1.04	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	152.84	15	\$248.07	15%	75%	\$157.12	7.56	7.22	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	556.57	15	\$263.92	15%	75%	\$45.90	2.75	2.63	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	20.37	15	\$248.07	15%	75%	\$1,179.05	0.10	0.10	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	17,554.33	10	\$1,796.53	15%	75%	\$12.87	0.50	0.48	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	75.17	5	\$267.96	18%	75%	\$774.21	3.63	3.45	AEG-BEST

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Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.15	15	\$0.05	10%	15%	\$33.17	0.96	0.92	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.39	14	\$5.25	6%	75%	\$156.33	2.31	2.20	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	18	\$0.26	15%	20%	\$231.88	2.57	2.51	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	814.33	15	\$189.00	19%	25%	\$22.47	0.86	0.82	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	293.45	15	\$1,273.23	19%	50%	\$420.02	1.71	1.63	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.06	15	\$0.02	19%	50%	\$25.37	5.99	5.72	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	9%	25%	\$3,865.60	0.30	0.29	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.59	15	\$0.76	3%	8%	\$92.13	0.52	0.50	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.21	15	\$0.76	3%	8%	\$92.13	3.68	3.51	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,632.82	15	\$7,501.21	15%	15%	\$99.44	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,679.11	15	\$7,501.21	15%	15%	\$99.44	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	5.30	3	\$33.20	15%	45%	\$2,140.21	0.05	0.05	RTU_MNT-Cooling-PGE-R2-1

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Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	New	116.49	15	\$410.87	15%	45%	\$345.61	6.88	6.67	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	111.18	15	\$698.92	15%	75%	\$616.02	15.38	15.01	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	222.88	20	\$1,958.49	15%	25%	\$293.52	0.21	0.21	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	331.70	20	\$1,958.49	15%	25%	\$293.52	0.71	0.68	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.21	5	\$0.75	30%	40%	\$251.05	1.38	1.33	STAT_WIFI-All-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.37	5	\$0.75	30%	40%	\$251.05	0.32	0.31	STAT_WIFI-All-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.07	5	\$0.75	30%	40%	\$251.05	1.16	1.12	STAT_WIFI-All-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	108.22	10	\$8.63	25%	65%	\$10.03	0.62	0.59	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	118.91	10	\$17.56	25%	65%	\$18.56	0.34	0.32	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	29.46	10	\$16.82	25%	65%	\$71.78	0.10	0.09	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	20%	\$7.33	0.74	0.72	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	416.28	15	\$15.38	1%	75%	\$3.58	2.67	2.55	AEG-BEST

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	443.53	4	\$75.87	25%	40%	\$44.69	0.55	0.51	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	0.24	0.23	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.59	3.80	3.63	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.26	15	\$0.36	13%	38%	\$133.48	103.22	100.72	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.37	15	\$0.60	13%	38%	\$157.31	144.51	141.01	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	559.37	15	\$56.14	1%	3%	\$9.90	0.49	0.47	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.59	15	\$65.99	1%	3%	\$121.54	0.03	0.03	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	426.67	11	\$26.48	15%	30%	\$7.34	1.78	1.71	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	43.69	16	\$1,864.95	5%	15%	\$4,000.16	1.46	1.41	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.25	9	\$0.65	15%	25%	\$39.47	4.63	4.47	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	97.38	8	\$56.85	15%	25%	\$87.37	2.27	2.19	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	121.77	7	\$3,486.31	15%	30%	\$4,749.91	3.86	3.72	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	935.17	12	\$50.74	0%	0%	\$6.03	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	3,747.32	4	\$24.51	0%	0%	\$1.79	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	4,000.71	15	\$347.21	0%	0%	\$8.42	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	2,147.72	2	\$10.74	0%	0%	\$2.45	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	94.40	15	\$508.61	0%	0%	\$522.76	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1,656.90	15	\$5,552.98	0%	0%	\$325.19	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	12,565.59	15	\$305.13	5%	25%	\$2.36	101.34	97.09	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	50,321.80	15	\$539.09	0%	0%	\$1.04	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	105,727.03	10	\$449.00	0%	0%	\$0.54	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	11,177.71	16	\$153.90	5%	25%	\$1.31	25.81	25.21	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	4,019.67	15	\$135.00	0%	0%	\$3.31	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	113,092.03	16	\$105.92	0%	0%	\$0.09	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	87,059.41	10	\$521.11	0%	0%	\$0.78	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	738.00	8	\$215.90	0%	0%	\$43.29	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	21,420.18	12	\$5,648.09	0%	0%	\$29.36	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	421.29	8	\$15.90	0%	0%	\$5.59	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	43.41	8	\$3.87	0%	0%	\$13.19	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	150.69	5	\$49.37	0%	0%	\$70.68	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,089.79	5	\$288.64	25%	75%	\$57.14	14.06	13.28	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,144.30	18	\$8,815.42	25%	50%	\$674.69	6.11	5.95	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	109.52	15	\$335.00	0%	0%	\$120.25	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	160.17	15	\$335.00	0%	0%	\$120.25	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	5.81	4	\$37.32	10%	50%	\$1,515.31	0.73	0.59	SMARTSTRIP-Electronics-RTF-v3.2-1

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Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$3.90	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,777.92	18	\$4,231.40	0%	0%	\$133.40	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.05	0%	0%	\$3,483.20	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	110.81	7	\$423.28	0%	0%	\$626.53	0.00	0.00	CW-Water Heating-RTF-v5.1-12

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Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$626.53	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$626.53	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	17,410.24	15	\$1,114.41	0%	0%	\$6.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$6.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,669.89	6	\$37.07	1%	3%	\$1.87	0.51	0.49	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.11	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.42	25	\$4.24	10%	15%	\$156.12	3.45	3.38	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	0.75	25	\$4.24	10%	15%	\$156.12	0.81	0.79	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.14	25	\$4.24	10%	15%	\$156.12	2.90	2.84	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.10	25	\$4.24	10%	15%	\$156.12	1.16	1.13	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	15%	\$156.12	43.67	42.88	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.24	10%	15%	\$156.12	7.56	7.45	ADVNC-AII-RSRCH-1

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Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.06	3	\$0.20	3%	11%	\$64.63	0.20	0.19	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.20	3%	11%	\$64.63	0.05	0.04	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.20	3%	11%	\$64.63	0.17	0.16	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.20	3%	11%	\$64.63	0.07	0.06	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.20	3%	11%	\$64.63	0.65	0.62	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.20	3%	11%	\$64.63	0.15	0.14	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.70	3	\$0.20	3%	11%	\$64.63	6.27	5.40	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.20	3%	11%	\$64.63	0.07	0.06	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.09	3	\$0.13	11%	73%	\$20.38	13.80	13.39	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.16	3	\$0.13	11%	73%	\$20.38	3.23	3.13	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.03	3	\$0.13	11%	73%	\$20.38	11.60	11.24	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.01	3	\$0.13	11%	73%	\$20.38	1.54	1.50	COM_CX-Water Heating-AEG-1

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.13	11%	73%	\$20.38	145.46	141.88	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.13	11%	73%	\$20.38	25.20	24.67	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.62	3	\$0.13	11%	73%	\$20.38	2,430.38	2,255.06	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.09	3	\$0.04	0%	0%	\$6.47	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.16	3	\$0.04	0%	0%	\$6.47	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.04	0%	0%	\$6.47	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.04	0%	0%	\$6.47	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.04	0%	0%	\$6.47	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.04	0%	0%	\$6.47	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.62	3	\$0.04	0%	0%	\$6.47	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$169.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	5.00	10	\$1.12	0%	0%	\$26.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.30	3	\$0.24	0%	0%	\$58.73	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	2.43	10	\$3.24	0%	0%	\$158.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.49	10	\$0.70	0%	0%	\$172.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	New	198.02	16	\$75.53	20%	75%	\$35.59	0.43	0.41	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	5,571.49	25	\$8,506.83	0%	0%	\$115.24	0.00	0.00	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	2.73	45	\$0.84	15%	35%	\$11.93	0.83	0.83	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.21	45	\$0.84	15%	35%	\$11.93	0.03	0.03	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	1.86	45	\$0.84	15%	35%	\$11.93	0.56	0.57	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	1.07	20	\$0.86	15%	35%	\$65.45	0.33	0.33	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.86	15%	35%	\$65.45	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.08	20	\$0.86	15%	35%	\$65.45	0.02	0.02	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	3.64	20	\$0.81	45%	50%	\$30.75	0.28	0.28	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.14	20	\$0.81	45%	50%	\$30.75	-0.01	-0.01	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-1.24	20	\$0.81	45%	50%	\$30.75	-0.09	-0.09	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$1.70	15%	35%	\$7.90	0.01	0.01	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.47	45	\$1.70	15%	35%	\$7.90	0.04	0.04	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	13.08	45	\$1.70	15%	35%	\$7.90	0.75	0.76	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	34.37	18	\$0.59	15%	50%	\$1.01	0.18	0.18	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	1.97	18	\$0.59	15%	50%	\$1.01	0.01	0.01	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	17.49	18	\$0.59	15%	50%	\$1.01	0.09	0.09	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	72.01	30	\$37.07	48%	48%	\$19.42	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	11.54	30	\$37.07	48%	48%	\$19.42	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	59.15	30	\$37.07	48%	48%	\$19.42	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	19,430.07	10	\$914.46	15%	75%	\$6.21	0.25	0.25	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	776.19	15	\$248.07	15%	75%	\$32.48	1.40	1.40	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	2,826.50	15	\$263.92	15%	75%	\$9.49	0.51	0.51	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	87,768.20	10	\$1,796.53	15%	75%	\$2.77	0.41	0.43	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	384.99	5	\$267.96	18%	75%	\$155.18	2.04	2.01	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	3.64	15	\$0.05	5%	15%	\$1.41	0.60	0.60	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.07	14	\$5.25	3%	75%	\$7,613.64	0.13	0.13	RES_HRV-Cooling-7PLN-v1-2

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Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	4.98	18	\$0.26	15%	20%	\$4.84	0.37	0.38	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	36,499.76	15	\$189.00	0%	0%	\$0.54	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	13,152.76	15	\$1,273.23	0%	0%	\$10.04	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	3.05	15	\$0.02	13%	50%	\$0.61	1.83	1.87	FAN_VSD-Ventilation-MIDATL-v3.0-13
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.30	15	\$0.23	9%	25%	\$80.65	0.08	0.08	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.62	15	\$0.76	3%	8%	\$41.09	0.03	0.03	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.26	15	\$0.76	3%	8%	\$41.09	0.11	0.11	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	39,931.59	15	\$7,501.21	15%	15%	\$16.55	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	5,920.69	15	\$7,501.21	15%	15%	\$16.55	0.00	0.00	HVLS-Heating-AEG-1
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	Existing	601.97	15	\$410.87	15%	45%	\$67.78	1.40	1.37	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	574.51	15	\$698.92	15%	75%	\$120.81	2.58	2.54	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	898.35	20	\$391.70	15%	25%	\$35.55	0.04	0.04	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	68.19	20	\$391.70	15%	25%	\$35.55	0.03	0.03	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	5.07	5	\$0.75	30%	40%	\$19.24	0.77	0.77	STAT_WIFI-All-7PLN-v2-1

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Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	30%	40%	\$19.24	0.03	0.03	STAT_WIFI-AII-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	3.45	5	\$0.75	30%	40%	\$19.24	0.52	0.53	STAT_WIFI-AII-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	189.32	10	\$8.63	25%	65%	\$5.90	0.01	0.01	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	208.03	10	\$17.56	25%	65%	\$10.92	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	51.55	10	\$16.82	25%	65%	\$42.23	0.00	0.00	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	20%	\$7.21	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	728.25	15	\$15.38	16%	75%	\$2.10	0.02	0.02	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	775.92	4	\$75.87	25%	40%	\$26.30	0.01	0.01	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	0.01	0.01	DHW_STBK-Water Heating-ILTRM-v4.0-4
Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.81	0.03	0.03	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.96	15	\$0.36	3%	23%	\$38.58	0.42	0.42	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.34	15	\$0.60	3%	23%	\$45.47	0.59	0.59	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	2,138.99	15	\$56.14	1%	3%	\$2.76	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.01	15	\$65.99	1%	3%	\$131.01	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,396.06	11	\$26.48	15%	30%	\$0.51	0.16	0.16	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	654.95	16	\$1,864.95	5%	15%	\$280.65	0.11	0.11	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.72	9	\$0.65	15%	25%	\$34.88	0.10	0.11	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	98.85	8	\$56.85	15%	25%	\$91.96	0.05	0.06	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	123.60	7	\$3,486.31	15%	30%	\$4,999.13	0.10	0.10	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	30.94	12	\$50.74	0%	0%	\$189.94	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	8.98	4	\$24.51	0%	0%	\$791.57	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	33.32	15	\$347.21	0%	0%	\$1,095.52	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	38.18	2	\$10.74	0%	0%	\$215.89	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.79	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.80	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	104.65	15	\$305.13	0%	0%	\$306.53	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

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Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	419.11	15	\$539.09	0%	0%	\$135.23	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	880.55	10	\$449.00	0%	0%	\$69.62	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	71.19	16	\$153.90	0%	0%	\$236.35	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	25.60	15	\$135.00	0%	0%	\$598.12	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	266.91	16	\$105.92	0%	0%	\$41.69	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	205.47	10	\$521.11	0%	0%	\$358.96	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	122.44	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	178.40	12	\$605.15	0%	0%	\$409.31	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	13.80	8	\$15.90	0%	0%	\$178.06	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.42	8	\$3.87	0%	0%	\$420.46	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	5.00	5	\$49.37	0%	0%	\$2,224.89	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,748.59	5	\$288.64	25%	75%	\$37.19	0.00	0.00	VEND_CTRL-Miscellaneous-SCE-17R0-42

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	58,765.46	18	\$8,815.42	25%	50%	\$14.08	0.89	0.90	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	2,180.04	15	\$335.00	0%	0%	\$14.63	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	160.16	15	\$335.00	0%	0%	\$14.63	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	2,473.63	4	\$37.32	10%	50%	\$3.22	5.28	3.79	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	13.67	5	\$1.03	20%	75%	\$16.48	16.73	16.03	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.10	8	\$0.93	10%	35%	\$41.29	0.04	0.04	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.93	10%	35%	\$41.29	0.02	0.02	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	3.24	8	\$0.93	10%	35%	\$41.29	1.81	1.73	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	1.10	6	\$0.18	10%	15%	\$30.94	0.12	0.12	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	142,659.80	18	\$4,231.40	0%	0%	\$2.78	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

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Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.79	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	193.85	7	\$423.28	0%	0%	\$368.64	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$368.64	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$368.64	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	30,458.17	15	\$1,114.41	0%	0%	\$3.65	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$3.65	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	242,408.92	6	\$37.07	1%	3%	\$0.03	0.25	0.24	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.84	20	\$8.09	0%	0%	\$823.00	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	6.33	25	\$4.24	0%	0%	\$24.72	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.24	0%	0%	\$24.72	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	4.51	25	\$4.24	0%	0%	\$24.72	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.24	0%	0%	\$24.72	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.87	25	\$4.24	0%	0%	\$24.72	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.24	0%	0%	\$24.72	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	Existing	1.58	3	\$7.88	0%	0%	\$380.93	0.00	0.00	COM_SEM-HVAC-AEG-1

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Data Center	Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$7.88	0%	0%	\$380.93	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	1.08	3	\$7.88	0%	0%	\$380.93	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$7.88	0%	0%	\$380.93	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.31	3	\$7.88	0%	0%	\$380.93	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$7.88	0%	0%	\$380.93	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$7.88	0%	0%	\$380.93	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	3.24	3	\$7.88	0%	0%	\$380.93	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	Existing	2.19	3	\$14.90	0%	0%	\$1,239.23	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	Existing	0.17	3	\$14.90	0%	0%	\$1,239.23	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	Existing	1.49	3	\$14.90	0%	0%	\$1,239.23	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	Existing	0.01	3	\$14.90	0%	0%	\$1,239.23	0.00	0.00	COM_CX-Water Heating-AEG-1
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.36	3	\$14.90	0%	0%	\$1,239.23	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.07	3	\$14.90	0%	0%	\$1,239.23	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$14.90	0%	0%	\$1,239.23	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	Existing	2.19	3	\$4.73	2%	65%	\$393.38	2.28	2.29	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	Existing	0.17	3	\$4.73	2%	65%	\$393.38	0.09	0.09	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	Existing	1.49	3	\$4.73	2%	65%	\$393.38	1.53	1.57	COM_RCX-HVAC-AEG-1

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Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$4.73	2%	65%	\$393.38	0.01	0.01	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.36	3	\$4.73	2%	65%	\$393.38	0.37	0.38	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$4.73	2%	65%	\$393.38	0.07	0.08	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$4.73	2%	65%	\$393.38	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.25	10	\$0.09	0%	0%	\$47.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Miscellaneous	LED Signage	perBldg	Existing	107.52	16	\$75.53	20%	75%	\$65.55	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	331,010.95	25	\$543,136.96	0%	75%	\$127.41	2.56	2.49	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$374.36	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.12	45	\$0.84	15%	50%	\$374.36	0.02	0.02	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$0.84	15%	50%	\$374.36	0.01	0.01	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	1.07	20	\$0.86	15%	50%	\$63.21	0.30	0.29	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.86	15%	50%	\$63.21	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.07	20	\$0.86	15%	50%	\$63.21	0.02	0.02	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	2.27	20	\$0.81	45%	50%	\$50.23	0.09	0.09	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.08	20	\$0.81	45%	50%	\$50.23	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.83	20	\$0.81	45%	50%	\$50.23	-0.03	-0.03	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.12	45	\$1.70	15%	50%	\$86.89	-0.01	-0.01	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.12	45	\$1.70	15%	50%	\$86.89	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	1.26	45	\$1.70	15%	50%	\$86.89	0.07	0.07	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	40.02	18	\$0.59	15%	35%	\$1.02	0.06	0.06	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.98	18	\$0.59	15%	35%	\$1.02	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	9.94	18	\$0.59	15%	35%	\$1.02	0.02	0.02	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	44.76	30	\$37.07	66%	66%	\$28.89	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	6.79	30	\$37.07	66%	66%	\$28.89	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	39.68	30	\$37.07	66%	66%	\$28.89	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,292.33	10	\$914.46	15%	75%	\$10.18	0.03	0.03	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	451.10	15	\$248.07	15%	75%	\$53.23	0.24	0.23	AEG-BEST

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Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,642.70	15	\$263.92	15%	75%	\$15.55	0.09	0.08	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	47,352.84	10	\$1,796.53	15%	75%	\$4.77	0.06	0.05	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	232.97	5	\$267.96	18%	75%	\$250.23	0.17	0.16	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	New	2.27	15	\$0.05	10%	15%	\$2.19	0.05	0.05	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.04	14	\$5.25	6%	75%	\$9,999.00	0.02	0.02	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	3.27	18	\$0.26	15%	20%	\$6.86	0.13	0.13	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	27,506.39	15	\$189.00	0%	0%	\$0.66	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	9,911.99	15	\$1,273.23	0%	0%	\$12.42	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	2.01	15	\$0.02	19%	50%	\$0.75	0.30	0.29	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.19	15	\$0.23	9%	25%	\$114.32	0.02	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.36	15	\$0.76	3%	8%	\$80.36	0.00	0.00	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	3%	8%	\$80.36	0.01	0.01	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	24,819.78	15	\$7,501.21	15%	15%	\$25.85	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	3,485.43	15	\$7,501.21	15%	15%	\$25.85	0.00	0.00	HVLS-Heating-AEG-1

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Data Center	Cooling	RTU - Maintenance	tonCool	New	5.30	3	\$33.20	15%	45%	\$2,140.21	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	New	366.57	15	\$410.87	15%	45%	\$109.83	0.39	0.38	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	349.85	15	\$698.92	15%	75%	\$195.76	0.88	0.86	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	711.53	20	\$391.70	15%	25%	\$43.30	0.01	0.01	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	40.37	20	\$391.70	15%	25%	\$43.30	0.01	0.01	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	3.15	5	\$0.75	30%	40%	\$28.62	0.08	0.07	STAT_WIFI-All-7PLN-v2-1
Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.23	5	\$0.75	30%	40%	\$28.62	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	2.32	5	\$0.75	30%	40%	\$28.62	0.06	0.06	STAT_WIFI-All-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	180.95	10	\$8.63	25%	65%	\$6.00	0.00	0.00	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	198.84	10	\$17.56	25%	65%	\$11.10	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	49.27	10	\$16.82	25%	65%	\$42.93	0.00	0.00	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	20%	\$7.33	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	696.07	15	\$15.38	1%	75%	\$2.14	0.01	0.01	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	741.64	4	\$75.87	25%	40%	\$26.73	0.00	0.00	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-4

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Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.59	0.01	0.01	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.89	15	\$0.36	11%	23%	\$39.48	0.23	0.23	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.25	15	\$0.60	11%	23%	\$46.54	0.33	0.32	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	1,995.27	15	\$56.14	1%	3%	\$2.82	0.00	0.00	CLTG_EXITLEC-Interior Lighting-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.72	15	\$65.99	1%	3%	\$123.33	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	5,921.71	11	\$26.48	15%	30%	\$0.53	0.04	0.04	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	606.37	16	\$1,864.95	5%	15%	\$288.64	0.03	0.03	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.52	9	\$0.65	15%	25%	\$35.95	0.02	0.02	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	91.71	8	\$56.85	15%	25%	\$94.78	0.01	0.01	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	114.68	7	\$3,486.31	15%	30%	\$5,152.52	0.02	0.02	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	29.31	12	\$50.74	0%	0%	\$192.35	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	8.23	4	\$24.51	0%	0%	\$821.11	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	31.41	15	\$347.21	0%	0%	\$1,112.13	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	31.99	2	\$10.74	0%	0%	\$247.03	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.74	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	13.01	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	98.64	15	\$305.13	0%	0%	\$311.18	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	395.03	15	\$539.09	0%	0%	\$137.28	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	829.96	10	\$449.00	0%	0%	\$70.68	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	66.19	16	\$153.90	0%	0%	\$246.27	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	23.80	15	\$135.00	0%	0%	\$623.21	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	241.57	16	\$105.92	0%	0%	\$43.96	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	185.97	10	\$521.11	0%	0%	\$378.51	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	3.66	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	168.15	12	\$5,648.09	0%	0%	\$3,878.15	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	13.20	8	\$15.90	0%	0%	\$178.26	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.36	8	\$3.87	0%	0%	\$420.93	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	4.72	5	\$49.37	0%	0%	\$2,255.49	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,652.97	5	\$288.64	25%	75%	\$37.67	0.00	0.00	VEND_CTRL-Miscellaneous-SCE-17R0-41
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	38,652.09	18	\$8,815.42	25%	50%	\$19.95	0.31	0.30	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	1,748.21	15	\$335.00	0%	0%	\$17.57	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	97.71	15	\$335.00	0%	0%	\$17.57	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	2,399.34	4	\$37.32	10%	50%	\$3.48	0.50	0.37	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	13.43	5	\$0.98	20%	75%	\$15.69	3.13	2.98	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.06	8	\$0.82	10%	35%	\$36.72	0.01	0.01	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.82	10%	35%	\$36.72	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	3.19	8	\$0.82	10%	35%	\$36.72	0.47	0.45	com-datacenters-7p_v5p.xlsx

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Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	1.08	6	\$0.13	10%	15%	\$22.78	0.03	0.02	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	93,832.32	18	\$4,231.40	0%	0%	\$3.95	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.09	0%	0%	\$3,483.20	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	185.29	7	\$423.28	0%	0%	\$374.69	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$374.69	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$374.69	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	29,112.33	15	\$1,114.41	0%	0%	\$3.71	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$3.71	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	242,408.92	6	\$37.07	1%	3%	\$0.03	0.05	0.05	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.81	20	\$7.28	0%	0%	\$744.36	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	New	6.34	25	\$4.24	10%	15%	\$23.20	0.19	0.19	ADVNC-All-RRSCH-1

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Data Center	Heating	Advanced New Construction Designs	sqft	New	0.46	25	\$4.24	10%	15%	\$23.20	0.01	0.01	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	4.66	25	\$4.24	10%	15%	\$23.20	0.15	0.14	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.17	25	\$4.24	10%	15%	\$23.20	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	1.90	25	\$4.24	10%	15%	\$23.20	0.23	0.22	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.37	25	\$4.24	10%	15%	\$23.20	0.03	0.03	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	New	0.98	3	\$5.29	0%	0%	\$307.53	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Heating	Strategic Energy Management	sqft	New	0.07	3	\$5.29	0%	0%	\$307.53	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.72	3	\$5.29	0%	0%	\$307.53	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$5.29	0%	0%	\$307.53	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.29	3	\$5.29	0%	0%	\$307.53	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$5.29	0%	0%	\$307.53	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$5.29	0%	0%	\$307.53	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	New	3.14	3	\$5.29	0%	0%	\$307.53	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	New	1.36	3	\$6.51	2%	65%	\$769.43	0.79	0.77	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	New	0.10	3	\$6.51	2%	65%	\$769.43	0.03	0.03	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	New	1.00	3	\$6.51	2%	65%	\$769.43	0.60	0.58	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	New	0.01	3	\$6.51	2%	65%	\$769.43	0.00	0.00	COM_CX-Water Heating-AEG-1

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Data Center	Interior Lighting	Commissioning	sqft	New	0.34	3	\$6.51	2%	65%	\$769.43	0.77	0.76	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$6.51	2%	65%	\$769.43	0.11	0.11	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$6.51	2%	65%	\$769.43	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	New	1.36	3	\$2.07	0%	0%	\$244.25	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	New	0.10	3	\$2.07	0%	0%	\$244.25	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	New	1.00	3	\$2.07	0%	0%	\$244.25	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$2.07	0%	0%	\$244.25	0.00	0.00	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.34	3	\$2.07	0%	0%	\$244.25	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$2.07	0%	0%	\$244.25	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$2.07	0%	0%	\$244.25	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.24	10	\$0.09	0%	0%	\$48.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Miscellaneous	LED Signage	perBldg	New	107.52	16	\$75.53	20%	75%	\$65.55	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	357,994.75	25	\$546,605.01	0%	75%	\$115.24	1.38	1.35	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$0.84	15%	35%	\$126.37	81.13	80.66	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.27	45	\$0.84	15%	35%	\$126.37	71.32	69.43	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$126.37	20.35	19.87	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.29	20	\$0.86	15%	50%	\$258.18	74.60	74.17	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$258.18	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$258.18	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.31	20	\$0.81	45%	50%	\$753.87	46.12	45.86	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.81	45%	50%	\$753.87	-11.89	-11.57	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.81	45%	50%	\$753.87	-5.98	-5.84	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.06	45	\$1.70	15%	35%	\$80.93	-11.34	-11.27	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.21	45	\$1.70	15%	35%	\$80.93	95.09	92.57	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$1.70	15%	35%	\$80.93	47.85	46.71	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.74	18	\$0.59	15%	50%	\$9,999.00	16.11	16.01	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.39	18	\$0.59	15%	50%	\$9,999.00	-6.24	-6.07	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.44	18	\$0.59	15%	50%	\$9,999.00	-3.14	-3.06	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.20	30	\$37.07	48%	48%	\$117.41	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	15.05	30	\$37.07	48%	48%	\$117.41	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.60	30	\$37.07	48%	48%	\$117.41	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	1,632.55	10	\$914.46	15%	75%	\$73.79	16.51	16.54	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	166.00	15	\$248.07	15%	75%	\$151.58	233.53	233.94	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	387.59	15	\$263.92	15%	75%	\$69.07	54.53	54.62	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	12,727.85	10	\$1,796.53	15%	75%	\$19.09	41.79	43.43	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	56.02	5	\$267.96	18%	75%	\$1,062.80	376.16	369.41	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.31	15	\$0.05	5%	15%	\$16.32	101.24	100.73	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.07	14	\$5.25	3%	75%	\$174.89	286.69	276.12	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.13	18	\$0.26	15%	20%	\$170.27	23.99	23.42	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	407.60	15	\$189.00	0%	0%	\$45.68	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	146.88	15	\$1,273.23	0%	0%	\$853.92	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.08	15	\$0.04	13%	25%	\$51.59	37.67	36.44	FAN_VSD-Ventilation-MIDATL-v3.0-13
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	21%	47%	\$2,838.62	8.12	7.85	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.81	15	\$0.76	7%	16%	\$67.63	101.02	97.30	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.29	15	\$0.76	7%	16%	\$67.63	99.31	96.05	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,440.58	15	\$7,501.21	15%	15%	\$66.54	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,722.61	15	\$7,501.21	15%	15%	\$66.54	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	8.70	3	\$33.20	15%	45%	\$1,320.75	33.25	32.50	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	Existing	88.21	15	\$410.87	15%	45%	\$462.55	304.69	299.12	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	84.18	15	\$698.92	15%	75%	\$824.45	558.78	550.00	RTU_PREC-Cooling-XCELCO-2017-18-1
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	128.94	20	\$685.47	15%	25%	\$217.75	12.33	12.93	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	145.54	20	\$685.47	15%	25%	\$217.75	48.09	45.89	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.44	5	\$0.75	30%	40%	\$160.80	128.28	127.53	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.51	5	\$0.75	30%	40%	\$160.80	66.11	64.36	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.09	5	\$0.75	30%	40%	\$160.80	33.27	32.48	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	55.42	10	\$8.63	25%	65%	\$20.15	36.93	35.94	DHW_AER-Water Heating-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	60.90	10	\$17.56	25%	65%	\$37.31	20.29	19.75	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	15.09	10	\$16.82	25%	65%	\$144.27	4.95	4.81	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	637.84	11	\$37.97	15%	20%	\$7.21	22.05	21.58	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	213.13	15	\$15.38	16%	75%	\$7.19	86.23	83.88	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	227.13	4	\$75.87	25%	40%	\$89.83	55.88	54.36	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.00	2	\$5.13	15%	75%	\$25.10	46.90	45.61	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kWh	Existing	13.05	20	\$258.33	1%	30%	\$1,693.46	149.35	145.27	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.44	15	\$0.36	3%	23%	\$84.75	414.85	415.92	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.61	15	\$0.60	3%	23%	\$99.89	580.80	582.29	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	157.70	15	\$56.14	1%	3%	\$37.93	11.93	12.45	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.03	15	\$65.99	1%	3%	\$132.62	0.47	0.49	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,396.86	11	\$26.48	15%	30%	\$1.37	133.23	133.54	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	245.43	16	\$1,864.95	5%	15%	\$748.00	90.95	91.16	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.48	9	\$0.65	15%	25%	\$38.85	118.76	123.72	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	101.48	8	\$56.85	15%	25%	\$90.86	63.12	65.76	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	126.89	7	\$3,486.31	15%	30%	\$4,939.26	118.39	123.34	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	24.65	12	\$50.74	0%	0%	\$237.95	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	11.55	4	\$24.51	0%	0%	\$767.06	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	28.22	15	\$347.21	0%	0%	\$1,337.82	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	32.51	2	\$10.74	0%	0%	\$252.58	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.67	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	11.69	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	88.63	15	\$305.13	0%	0%	\$374.32	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	354.95	15	\$539.09	0%	0%	\$165.14	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	745.75	10	\$449.00	0%	0%	\$85.02	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	61.48	16	\$153.90	0%	0%	\$302.84	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	22.11	15	\$135.00	0%	0%	\$766.38	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	345.60	16	\$105.92	0%	0%	\$40.12	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	266.05	10	\$521.11	0%	0%	\$345.45	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	104.26	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	151.09	12	\$605.15	0%	0%	\$499.84	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	11.00	8	\$15.90	0%	0%	\$223.10	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.13	8	\$3.87	0%	0%	\$526.79	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.98	5	\$49.37	0%	0%	\$2,787.60	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,473.49	5	\$288.64	25%	75%	\$44.43	45.76	44.89	VEND_CTRL-Miscellaneous-SCE-17R0-47
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,585.74	18	\$8,815.42	25%	50%	\$495.44	57.00	55.64	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	178.80	15	\$335.00	0%	0%	\$92.29	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	191.27	15	\$335.00	0%	0%	\$92.29	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.46	4	\$37.32	10%	50%	\$703.56	49.65	39.94	SMARTSTRIP-Electronics-RTF-v3.2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$16.48	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.08	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.08	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.08	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$11.06	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	577.44	18	\$4,231.40	0%	5%	\$653.07	6.87	6.71	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	62.96	10	\$19.59	15%	75%	\$40.40	0.36	0.35	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	28.45	5	\$18,906.62	15%	75%	\$9,999.00	0.05	0.04	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.19	0%	0%	\$3,831.50	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	56.75	7	\$423.28	0%	0%	\$1,235.28	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.56	7	\$423.28	0%	0%	\$1,235.28	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.56	7	\$423.28	0%	0%	\$1,235.28	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	8,915.93	15	\$1,114.41	0%	5%	\$12.41	60.94	59.27	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	29.23	15	\$1,114.41	0%	5%	\$12.41	0.04	0.04	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,039.96	6	\$37.07	1%	3%	\$6.61	15.28	14.74	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.20	0%	5%	\$823.00	2.47	2.37	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.65	25	\$4.24	0%	0%	\$114.48	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	0.67	25	\$4.24	0%	0%	\$114.48	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.24	0%	0%	\$114.48	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.33	25	\$4.24	0%	0%	\$114.48	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.92	25	\$4.24	0%	0%	\$114.48	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$114.48	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.14	3	\$0.07	5%	16%	\$41.71	48.26	48.02	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.16	3	\$0.07	5%	16%	\$41.71	24.87	23.95	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.07	5%	16%	\$41.71	12.52	12.11	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.05	3	\$0.07	5%	16%	\$41.71	12.27	11.94	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.07	5%	16%	\$41.71	59.37	61.43	COM_SEM-Lighting-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.07	5%	16%	\$41.71	12.89	13.43	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.07	5%	16%	\$41.71	5.16	3.86	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.07	5%	16%	\$41.71	8.94	7.19	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.19	3	\$0.38	0%	0%	\$187.67	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	Existing	0.22	3	\$0.38	0%	0%	\$187.67	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.38	0%	0%	\$187.67	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.03	3	\$0.38	0%	0%	\$187.67	0.00	0.00	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.18	3	\$0.38	0%	0%	\$187.67	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.38	0%	0%	\$187.67	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.38	0%	0%	\$187.67	0.00	0.00	COM_CX-Refrigeration-AEG-1
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.19	3	\$0.12	10%	65%	\$59.57	334.08	332.42	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.22	3	\$0.12	10%	65%	\$59.57	172.18	165.84	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.12	10%	65%	\$59.57	86.65	83.81	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.12	10%	65%	\$59.57	28.32	27.55	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.18	3	\$0.12	10%	65%	\$59.57	342.51	354.42	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.12	10%	65%	\$59.57	74.35	77.45	COM_RCX-Lighting-AEG-1

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Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.12	10%	65%	\$59.57	59.51	44.50	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$97.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.12	0%	0%	\$1,999.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.24	0%	0%	\$4,385.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	Existing	140.31	16	\$75.53	20%	75%	\$50.23	29.26	27.71	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,299.16	25	\$2,131.72	0%	0%	\$127.41	0.00	0.00	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$297.78	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.18	45	\$0.84	15%	50%	\$297.78	44.77	43.69	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$297.78	1.89	1.85	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.37	20	\$0.86	15%	50%	\$157.66	54.22	52.98	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.07	20	\$0.86	15%	50%	\$157.66	4.30	4.20	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	50%	\$157.66	2.90	2.83	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.81	45%	50%	\$3,310.09	6.82	6.66	Building Energy Simulation Tool

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Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.81	45%	50%	\$3,310.09	-1.75	-1.71	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$3,310.09	-1.18	-1.15	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$522.55	-0.29	-0.28	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.17	45	\$1.70	15%	50%	\$522.55	12.70	12.40	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$522.55	8.55	8.34	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	2.17	18	\$0.59	15%	50%	\$5.70	7.00	6.84	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	5.53	18	\$0.59	15%	50%	\$5.70	7.65	7.46	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.35	18	\$0.59	15%	50%	\$5.70	5.15	5.02	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.60	30	\$37.07	66%	66%	\$165.54	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	9.91	30	\$37.07	66%	66%	\$165.54	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.39	30	\$37.07	66%	66%	\$165.54	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,261.54	10	\$914.46	15%	75%	\$91.13	3.29	3.13	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	128.28	15	\$248.07	15%	75%	\$187.21	57.86	55.26	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	299.51	15	\$263.92	15%	75%	\$85.30	13.51	12.90	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	8,752.70	10	\$1,796.53	15%	75%	\$25.81	7.80	7.41	AEG-BEST

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Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	41.44	5	\$267.96	18%	75%	\$1,408.73	40.73	38.70	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.23	15	\$0.05	10%	15%	\$21.27	11.79	11.31	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.02	14	\$5.25	6%	75%	\$262.18	53.20	50.79	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.12	18	\$0.26	15%	20%	\$193.88	11.05	10.77	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	376.86	15	\$189.00	0%	0%	\$48.53	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	135.80	15	\$1,273.23	0%	0%	\$907.19	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.07	15	\$0.04	19%	25%	\$54.80	4.71	4.50	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	21%	47%	\$3,232.09	2.14	2.04	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.53	15	\$0.76	7%	16%	\$94.59	19.81	18.93	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.25	15	\$0.76	7%	16%	\$94.59	26.13	24.95	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,553.01	15	\$7,501.21	15%	15%	\$95.42	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,086.13	15	\$7,501.21	15%	15%	\$95.42	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	6.29	3	\$33.20	15%	45%	\$1,802.28	1.72	1.63	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	New	63.78	15	\$410.87	15%	45%	\$631.19	112.32	108.95	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	60.87	15	\$698.92	15%	75%	\$1,125.04	250.43	244.50	RTU_PREC-Cooling-XCELCO-2017-18-1

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Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	91.35	20	\$685.47	15%	25%	\$303.67	3.90	3.74	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	96.27	20	\$685.47	15%	25%	\$303.67	11.95	11.46	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.32	5	\$0.75	30%	40%	\$220.67	16.75	16.12	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.33	5	\$0.75	30%	40%	\$220.67	7.38	7.08	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.08	5	\$0.75	30%	40%	\$220.67	4.97	4.76	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	52.97	10	\$8.63	25%	65%	\$20.48	7.37	6.98	DHW_AER-Water Heating-ILTRM-v4.0-1
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	58.20	10	\$17.56	25%	65%	\$37.92	4.05	3.84	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	14.42	10	\$16.82	25%	65%	\$146.64	1.18	1.12	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	609.66	11	\$37.97	15%	20%	\$7.33	8.72	8.46	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	203.72	15	\$15.38	1%	75%	\$7.31	31.79	30.36	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	217.10	4	\$75.87	25%	40%	\$91.31	6.50	6.13	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.45	2	\$5.13	15%	75%	\$25.51	2.90	2.73	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.47	20	\$258.33	1%	30%	\$1,721.24	45.22	43.22	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.41	15	\$0.36	11%	23%	\$86.99	253.04	248.44	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.57	15	\$0.60	11%	23%	\$102.53	354.26	347.82	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	146.88	15	\$56.14	1%	3%	\$38.88	2.99	2.94	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.39	15	\$65.99	1%	3%	\$125.75	0.12	0.12	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,219.10	11	\$26.48	15%	30%	\$1.41	33.56	32.25	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	227.23	16	\$1,864.95	5%	15%	\$769.00	27.51	26.54	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.29	9	\$0.65	15%	25%	\$40.19	26.18	25.93	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	93.89	8	\$56.85	15%	25%	\$93.99	12.85	12.72	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	117.39	7	\$3,486.31	15%	30%	\$5,109.42	21.83	21.62	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	23.42	12	\$50.74	0%	0%	\$240.69	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	10.05	4	\$24.51	0%	0%	\$838.59	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.87	15	\$347.21	0%	0%	\$1,403.04	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	26.73	2	\$10.74	0%	0%	\$298.68	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.61	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	10.72	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

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Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	81.26	15	\$305.13	0%	0%	\$392.57	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	325.43	15	\$539.09	0%	0%	\$173.19	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	683.73	10	\$449.00	0%	0%	\$89.17	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	54.19	16	\$153.90	0%	0%	\$332.07	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	19.49	15	\$135.00	0%	0%	\$840.34	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	296.84	16	\$105.92	0%	0%	\$44.74	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	228.51	10	\$521.11	0%	0%	\$385.23	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	3.06	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	138.52	12	\$5,648.09	0%	0%	\$4,892.56	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	10.55	8	\$15.90	0%	0%	\$223.06	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.09	8	\$3.87	0%	0%	\$526.71	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.77	5	\$49.37	0%	0%	\$2,822.34	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,376.33	5	\$288.64	25%	75%	\$45.24	5.94	5.61	VEND_CTRL-Miscellaneous-SCE-17R0-41
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,367.98	18	\$8,815.42	25%	50%	\$564.12	26.26	25.60	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	128.25	15	\$335.00	0%	0%	\$125.11	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	130.95	15	\$335.00	0%	0%	\$125.11	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	12.23	4	\$37.32	10%	50%	\$726.41	5.49	4.46	SMARTSTRIP-Electronics-RTF-v3.2-1
Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$15.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$6.33	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	498.14	18	\$4,231.40	0%	5%	\$743.60	3.17	3.09	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	60.60	10	\$19.59	15%	75%	\$40.64	0.13	0.13	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	New	28.06	5	\$18,906.62	15%	75%	\$9,999.00	0.01	0.01	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.17	0%	0%	\$3,653.69	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	54.24	7	\$423.28	0%	0%	\$1,255.34	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.53	7	\$423.28	0%	0%	\$1,255.34	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.53	7	\$423.28	0%	0%	\$1,255.34	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	8,521.97	15	\$1,114.41	0%	5%	\$12.62	18.00	17.19	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	27.05	15	\$1,114.41	0%	5%	\$12.62	0.01	0.01	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,039.96	6	\$37.07	1%	3%	\$6.61	3.42	3.30	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.18	0%	5%	\$744.36	0.75	0.72	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.65	25	\$4.24	10%	15%	\$110.33	41.30	40.43	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	0.67	25	\$4.24	10%	15%	\$110.33	18.20	17.80	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.16	25	\$4.24	10%	15%	\$110.33	12.25	11.97	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.34	25	\$4.24	10%	15%	\$110.33	13.48	13.18	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.93	25	\$4.24	10%	15%	\$110.33	259.33	256.38	ADVNC-AII-RSRCH-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	15%	\$110.33	41.80	41.57	ADVNC-All-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.05	16%	16%	\$32.86	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.10	3	\$0.05	16%	16%	\$32.86	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.05	16%	16%	\$32.86	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$0.05	16%	16%	\$32.86	0.00	0.00	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.05	16%	16%	\$32.86	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.05	16%	16%	\$32.86	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.05	16%	16%	\$32.86	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.05	16%	16%	\$32.86	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	New	0.14	3	\$0.24	10%	65%	\$143.12	147.12	142.82	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	New	0.14	3	\$0.24	10%	65%	\$143.12	64.84	62.82	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	New	0.04	3	\$0.24	10%	65%	\$143.12	43.63	42.25	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	New	0.02	3	\$0.24	10%	65%	\$143.12	16.01	15.50	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.17	3	\$0.24	10%	65%	\$143.12	769.75	759.00	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.24	10%	65%	\$143.12	124.08	123.25	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.24	10%	65%	\$143.12	35.13	29.92	COM_CX-Refrigeration-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.14	3	\$0.07	0%	0%	\$45.43	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.14	3	\$0.07	0%	0%	\$45.43	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.07	0%	0%	\$45.43	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.07	0%	0%	\$45.43	0.00	0.00	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.17	3	\$0.07	0%	0%	\$45.43	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.07	0%	0%	\$45.43	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.07	0%	0%	\$45.43	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$99.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.06	10	\$1.12	0%	0%	\$2,253.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$4,942.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	New	140.31	16	\$75.53	20%	75%	\$50.23	7.35	7.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,420.53	25	\$2,168.94	0%	0%	\$115.24	0.00	0.00	WHP Analysis

Utah Commercial Measures Assumptions

Table I-8 Summary of Commercial Measure Assumptions in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	41.54	20	\$18.63	14%	100%	\$32.27	7,593.43	7,593.43	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	50.83	25	\$20.82	8%	100%	\$24.51	5,612.17	5,612.17	AEG BEST
Large Office	Cooling	RTU	1 kBTU/hr	Existing	15.59	15	\$1.02	44%	100%	\$5.46	9,507.20	9,507.20	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	Existing	222.49	15	\$210.81	2%	100%	\$79.44	563.57	563.57	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	Existing	222.49	15	\$200.86	1%	100%	\$49.98	178.75	178.75	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	4.78	15	\$2.34	14%	100%	\$50.92	1,866.09	1,541.74	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	20.50	25	\$22.89	8%	100%	\$59.78	1,042.27	1,042.27	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	Existing	114.42	15	\$200.86	1%	100%	\$49.98	91.93	91.93	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.70	15	\$2.34	14%	100%	\$50.92	402.23	362.36	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.53	25	\$22.89	8%	100%	\$59.78	230.37	230.37	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	27,944.00	20	\$1,330.55	100%	100%	\$3.43	14,430.80	14,430.80	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	45%	100%	\$125.87	473.05	473.05	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	Existing	61.15	8	\$1.09	100%	100%	\$1.49	1,771.61	1,944.83	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	Existing	68.25	8	\$4.71	100%	100%	\$4.82	1,097.72	1,047.82	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	62.30	17	\$64.65	100%	100%	\$41.98	43,966.35	41,988.35	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	High-Bay Lighting	lamps	Existing	317.53	15	\$6.29	100%	100%	(\$4.64)	19,620.09	18,078.38	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	Existing	143.10	8	\$1.06	100%	100%	\$0.76	399.83	523.46	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	74.44	17	\$64.65	100%	100%	\$35.14	3,529.49	3,406.84	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,011.39	15	\$157.49	100%	100%	\$2.29	23,401.64	22,211.83	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	14%	100%	\$237.85	48.35	48.35	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	45%	100%	\$22.35	54.55	54.55	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	45%	100%	\$59.46	31.57	31.57	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	66%	100%	\$7.93	763.11	763.11	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	76%	100%	\$42.61	506.14	506.14	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	43%	100%	\$4.11	297.08	297.08	DW-Food Preparation-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	43%	100%	\$50.91	218.91	218.91	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	43%	100%	\$0.23	1,574.96	1,574.96	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	3,172.64	3,172.64	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	188.21	188.21	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	421.54	421.54	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	293.55	293.55	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	10%	\$0.02	14.92	14.92	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	35.39	20	\$18.63	14%	100%	\$37.88	6,710.06	6,710.06	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	41.50	25	\$20.82	8%	100%	\$30.02	5,256.60	5,256.60	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	RTU	1 kBTU/hr	New	10.31	15	\$1.02	44%	100%	\$8.25	6,662.69	6,662.69	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	New	199.14	15	\$210.81	2%	100%	\$88.76	542.90	542.90	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	New	199.14	15	\$200.86	1%	100%	\$43.22	447.71	429.97	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	4.06	15	\$2.34	14%	100%	\$36.65	700.27	700.27	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	20.50	25	\$22.89	8%	100%	\$59.78	1,225.38	1,225.38	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	New	113.03	15	\$200.86	1%	100%	\$43.22	238.01	228.98	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.29	15	\$2.34	14%	100%	\$36.65	222.49	222.49	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.53	25	\$22.89	8%	100%	\$59.78	270.85	270.85	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	25,266.16	20	\$1,330.55	100%	100%	\$3.79	21,287.39	21,287.39	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	45%	100%	\$125.87	464.05	464.05	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	New	61.15	8	\$1.09	100%	100%	\$1.49	1,011.38	986.99	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	New	68.25	8	\$4.71	100%	100%	\$4.82	557.49	532.87	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	New	62.30	17	\$64.65	100%	100%	\$41.98	37,498.91	36,193.18	USDOE SSL Projections - 2016
Large Office	Interior Lighting	High-Bay Lighting	lamps	New	317.53	15	\$6.29	100%	100%	(\$4.64)	16,873.96	15,776.19	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	New	143.10	8	\$1.06	100%	100%	\$0.76	217.91	237.45	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	New	74.44	17	\$64.65	100%	100%	\$35.14	3,273.22	3,191.90	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,011.39	15	\$157.49	100%	100%	\$2.29	24,341.37	23,490.10	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	14%	100%	\$237.85	45.57	45.57	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	45%	100%	\$22.35	46.85	46.85	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	45%	100%	\$59.46	30.10	30.10	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	66%	100%	\$7.93	714.50	714.50	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	76%	100%	\$42.61	470.04	470.04	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	43%	100%	\$4.11	270.08	270.08	DW-Food Preparation-XCELCO-2017-18-1
Large Office	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	43%	100%	\$50.91	243.00	243.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	43%	100%	\$0.23	1,691.34	1,691.34	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	2,162.90	2,162.90	CEL_PCDT-Office Equipment-7PTN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	125.41	125.41	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	236.25	236.25	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	190.17	190.17	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	10%	\$0.02	11.07	11.07	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	Existing	16.47	15	\$1.02	66%	100%	\$5.17	12,833.90	12,833.90	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$83.56	1,207.23	1,207.23	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	21.66	25	\$22.89	8%	100%	\$55.96	938.79	938.79	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$83.56	163.62	163.62	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	5.08	25	\$22.89	8%	100%	\$55.96	220.27	220.27	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	16,190.47	20	\$1,330.55	100%	100%	\$5.92	10,009.47	10,009.47	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	60%	100%	\$125.87	480.02	480.02	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	Existing	57.55	8	\$1.09	100%	100%	\$1.56	1,453.91	1,596.23	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	Existing	83.26	8	\$4.71	100%	100%	\$3.95	1,271.01	1,213.18	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	65.92	17	\$64.65	100%	100%	\$39.60	35,989.99	34,352.83	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	Existing	457.64	15	\$6.29	100%	100%	(\$3.24)	24,850.71	22,985.88	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	Existing	109.52	8	\$1.06	100%	100%	\$0.79	973.74	1,021.45	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	95.09	17	\$64.65	100%	100%	\$27.45	1,337.45	1,291.26	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	905.61	15	\$157.49	100%	100%	\$2.55	25,931.39	24,617.56	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	9%	100%	\$237.85	121.50	121.50	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	5%	100%	\$22.35	24.85	24.85	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	5%	100%	\$59.46	7.19	7.19	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	4%	100%	\$7.93	75.67	75.67	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	4%	100%	\$42.61	43.36	43.36	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	4%	100%	\$4.11	45.15	45.15	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	4%	100%	\$50.91	33.27	33.27	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	4%	100%	\$0.23	239.36	239.36	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	1,445.41	1,445.41	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	85.75	85.75	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	192.05	192.05	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	401.21	401.21	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	20%	10%	\$0.02	21.08	21.08	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	New	10.28	15	\$1.02	66%	100%	\$8.28	8,487.74	8,487.74	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$105.00	222.21	222.21	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$63.23	239.56	239.56	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	21.66	25	\$22.89	8%	100%	\$55.96	1,103.72	1,103.72	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$63.23	139.49	139.49	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	5.08	25	\$22.89	8%	100%	\$55.96	258.97	258.97	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	New	14,550.93	20	\$1,330.55	100%	100%	\$6.58	13,094.55	13,094.55	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	60%	100%	\$125.87	470.88	470.88	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	New	57.55	8	\$1.09	100%	100%	\$1.56	812.17	792.28	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	New	83.26	8	\$4.71	100%	100%	\$3.95	654.68	625.68	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	New	65.92	17	\$64.65	100%	100%	\$39.60	31,384.87	30,304.14	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	New	457.64	15	\$6.29	100%	100%	(\$3.24)	21,281.43	19,953.58	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	New	109.52	8	\$1.06	100%	100%	\$0.79	607.94	577.08	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	New	95.09	17	\$64.65	100%	100%	\$27.45	1,238.83	1,208.20	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	New	905.61	15	\$157.49	100%	100%	\$2.55	27,329.93	26,389.92	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	9%	100%	\$237.85	114.50	114.50	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	5%	100%	\$22.35	21.34	21.34	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	5%	100%	\$59.46	6.86	6.86	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	4%	100%	\$7.93	70.85	70.85	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	4%	100%	\$42.61	40.26	40.26	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	4%	100%	\$4.11	41.04	41.04	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	4%	100%	\$50.91	36.93	36.93	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	4%	100%	\$0.23	257.04	257.04	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	985.39	985.39	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	57.13	57.13	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	107.63	107.63	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	259.91	259.91	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	20%	10%	\$0.02	15.13	15.13	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	27.02	20	\$2.19	1%	100%	\$46.09	158.44	158.44	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	33.92	25	\$20.82	1%	100%	\$36.72	115.92	115.92	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	10.84	15	\$1.02	79%	100%	\$7.85	4,429.14	4,429.14	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	28,034.37	20	\$1,330.55	100%	100%	\$3.42	7,586.69	7,586.69	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Water Heating	Water Heater	1 kBtu/hr	Existing	1.23	13	\$1.69	61%	100%	\$125.87	173.08	173.08	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	Existing	149.53	8	\$1.09	100%	100%	\$0.81	766.01	1,059.63	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	Existing	353.93	8	\$4.71	100%	100%	\$0.93	1,859.13	1,768.80	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	133.68	17	\$64.65	100%	100%	\$19.51	20,940.20	19,996.64	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	787.53	15	\$6.29	100%	100%	(\$1.88)	11,409.16	10,535.60	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	Existing	150.49	8	\$1.06	100%	100%	\$0.69	349.29	419.36	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	109.48	17	\$64.65	100%	100%	\$23.83	436.65	421.66	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	927.59	15	\$157.49	100%	100%	\$2.49	3,577.03	3,396.12	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	14%	100%	\$237.85	31.05	31.05	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	52%	100%	\$22.35	81.43	81.43	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	52%	100%	\$59.46	23.75	23.75	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	49%	100%	\$7.93	270.44	270.44	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	45%	100%	\$42.61	143.48	143.48	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	40%	100%	\$4.11	130.31	130.31	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	40%	100%	\$50.91	96.08	96.08	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	40%	100%	\$0.23	690.79	690.79	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	109.57	109.57	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	6.54	6.54	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	14.53	14.53	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	82%	10%	\$0.03	13.48	13.48	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	2.29	2.29	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	22.83	20	\$2.19	1%	100%	\$44.74	127.96	127.96	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	26.97	25	\$20.82	1%	100%	\$46.18	98.24	98.24	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	New	8.98	15	\$1.02	79%	100%	\$9.48	3,602.31	3,602.31	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$102.04	23.23	23.23	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$102.04	11.38	11.38	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	24,135.84	20	\$1,330.55	100%	100%	\$3.97	8,845.81	8,845.81	AEG-BEST
Large Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	61%	100%	\$125.87	156.40	156.40	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	New	149.53	8	\$1.09	100%	100%	\$0.81	425.83	487.40	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	New	353.93	8	\$4.71	100%	100%	\$0.93	976.21	934.29	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Interior Lighting	Linear Lighting	lamps	New	133.68	17	\$64.65	100%	100%	\$19.51	16,810.86	16,230.38	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	New	787.53	15	\$6.29	100%	100%	(\$1.88)	9,577.77	8,997.67	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	New	150.49	8	\$1.06	100%	100%	\$0.69	187.33	193.08	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	109.48	17	\$64.65	100%	100%	\$23.83	375.34	366.08	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	New	927.59	15	\$157.49	100%	100%	\$2.49	3,229.35	3,108.61	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	14%	100%	\$237.85	26.97	26.97	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	52%	100%	\$22.35	64.74	64.74	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	52%	100%	\$59.46	20.79	20.79	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	49%	100%	\$7.93	233.48	233.48	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	45%	100%	\$42.61	122.67	122.67	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	40%	100%	\$4.11	109.46	109.46	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	40%	100%	\$50.91	98.77	98.77	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	40%	100%	\$0.23	686.56	686.56	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	69.67	69.67	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	4.04	4.04	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	7.60	7.60	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	82%	10%	\$0.03	8.02	8.02	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	1.61	1.61	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	Existing	11.82	15	\$1.02	67%	100%	\$7.20	8,798.39	8,798.39	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	15.53	25	\$22.89	8%	100%	\$80.29	645.38	645.38	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	3.10	25	\$22.89	8%	100%	\$80.29	128.84	128.84	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	9,514.94	20	\$1,330.55	100%	100%	\$10.07	5,523.87	5,523.87	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	62%	100%	\$125.87	333.35	333.35	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	Existing	98.69	8	\$1.09	100%	100%	\$1.23	1,084.57	1,500.29	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	Existing	233.60	8	\$4.71	100%	100%	\$1.41	2,632.26	2,504.37	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	88.23	17	\$64.65	100%	100%	\$29.56	29,648.31	28,312.37	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	519.77	15	\$6.29	100%	100%	(\$2.84)	16,153.74	14,916.89	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	Existing	150.49	8	\$1.06	100%	100%	\$0.69	749.31	899.63	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	109.48	17	\$64.65	100%	100%	\$23.83	936.71	904.57	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	927.59	15	\$157.49	100%	100%	\$2.49	7,673.57	7,285.47	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	5%	100%	\$237.85	15.57	15.57	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	5%	100%	\$22.35	10.39	10.39	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	5%	100%	\$59.46	3.03	3.03	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	4%	100%	\$7.93	50.98	50.98	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	4%	100%	\$42.61	29.26	29.26	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	4%	100%	\$4.11	30.36	30.36	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	4%	100%	\$50.91	22.38	22.38	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	4%	100%	\$0.23	160.93	160.93	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	79.64	79.64	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	4.75	4.75	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	10.56	10.56	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	89.45	89.45	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	22.22	22.22	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	New	8.51	15	\$1.02	67%	100%	\$10.00	6,220.59	6,220.59	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$98.51	78.13	78.13	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	15.53	25	\$22.89	8%	100%	\$80.29	703.62	703.62	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$98.51	49.49	49.49	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	3.10	25	\$22.89	8%	100%	\$80.29	140.46	140.46	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	8,816.91	20	\$1,330.55	100%	100%	\$10.86	6,932.13	6,932.13	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	62%	100%	\$125.87	301.23	301.23	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	New	98.69	8	\$1.09	100%	100%	\$1.23	602.91	690.08	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	New	233.60	8	\$4.71	100%	100%	\$1.41	1,382.18	1,322.82	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	New	88.23	17	\$64.65	100%	100%	\$29.56	23,801.76	22,979.88	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	New	519.77	15	\$6.29	100%	100%	(\$2.84)	13,560.74	12,739.41	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	New	150.49	8	\$1.06	100%	100%	\$0.69	401.88	414.19	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	109.48	17	\$64.65	100%	100%	\$23.83	805.20	785.33	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	New	927.59	15	\$157.49	100%	100%	\$2.49	6,927.71	6,668.71	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	5%	100%	\$237.85	13.53	13.53	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	5%	100%	\$22.35	8.26	8.26	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	5%	100%	\$59.46	2.65	2.65	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	4%	100%	\$7.93	44.01	44.01	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	4%	100%	\$42.61	25.02	25.02	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	4%	100%	\$4.11	25.50	25.50	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	4%	100%	\$50.91	23.01	23.01	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	4%	100%	\$0.23	159.94	159.94	COOK_STM-Food Preparation-RTF-v2.4-2
Small Retail	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	50.64	50.64	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	2.93	2.93	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	5.52	5.52	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	53.43	53.43	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	15.56	15.56	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	10.16	15	\$1.02	73%	100%	\$8.38	2,336.36	2,336.36	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	7,741.75	20	\$1,330.55	100%	100%	\$12.37	1,303.55	1,303.55	AEG-BEST
Restaurant	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	58%	100%	\$125.87	589.52	589.52	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	Existing	122.55	8	\$1.09	100%	100%	\$0.80	1,270.36	1,412.02	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	Existing	753.53	8	\$4.71	100%	100%	\$0.44	1,878.85	1,787.69	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	155.44	17	\$64.65	100%	100%	\$16.79	5,468.10	5,222.67	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	Existing	1,242.01	15	\$6.29	100%	100%	(\$1.23)	6,152.77	5,771.44	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	Existing	112.08	8	\$1.06	100%	100%	\$0.78	170.65	185.17	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	111.77	17	\$64.65	100%	100%	\$23.35	918.99	887.40	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	907.73	15	\$157.49	100%	100%	\$2.54	4,128.37	3,918.81	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	7%	100%	\$237.85	275.51	275.51	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	97%	100%	\$22.35	670.75	670.75	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	97%	100%	\$59.46	195.59	195.59	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Food Preparation	Oven	1 unit	Existing	0.00	10	\$1,104.16	0%	100%	\$0.00	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	Existing	0.00	8	\$814.12	0%	100%	\$0.00	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	53%	100%	\$4.11	4,211.47	4,211.47	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	0.00	20	\$882.04	0%	100%	\$0.00	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	0%	100%	\$0.00	0.00	0.00	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	45.05	45.05	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	2.15	2.15	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	5.97	5.97	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	50%	10%	\$0.03	33.19	33.19	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	12.57	12.57	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Restaurant	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	New	7.45	15	\$1.02	73%	100%	\$11.43	1,682.25	1,682.25	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	6,716.49	20	\$1,330.55	100%	100%	\$14.26	1,502.59	1,502.59	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	58%	100%	\$125.87	532.71	532.71	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	New	122.55	8	\$1.09	100%	100%	\$0.80	821.11	811.62	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	New	753.53	8	\$4.71	100%	100%	\$0.44	1,195.38	1,153.34	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	New	155.44	17	\$64.65	100%	100%	\$16.79	4,363.38	4,212.39	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	New	1,242.01	15	\$6.29	100%	100%	(\$1.23)	4,847.75	4,594.52	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	New	112.08	8	\$1.06	100%	100%	\$0.78	88.19	84.95	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	111.77	17	\$64.65	100%	100%	\$23.35	790.22	770.70	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	New	907.73	15	\$157.49	100%	100%	\$2.54	3,870.72	3,730.87	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	7%	100%	\$237.85	239.30	239.30	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	97%	100%	\$22.35	533.24	533.24	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	97%	100%	\$59.46	171.23	171.23	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Food Preparation	Oven	1 unit	New	0.00	10	\$1,104.16	0%	100%	\$0.00	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	New	0.00	8	\$814.12	0%	100%	\$0.00	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	53%	100%	\$4.11	3,537.51	3,537.51	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	New	0.00	20	\$882.04	0%	100%	\$0.00	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	New	0.00	20	\$142.38	0%	100%	\$0.00	0.00	0.00	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	28.64	28.64	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	1.33	1.33	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	3.12	3.12	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	50%	10%	\$0.03	19.54	19.54	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	8.80	8.80	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	50.95	20	\$18.63	1%	100%	\$26.32	36.97	36.97	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	85.28	25	\$20.82	0%	100%	\$15.06	33.62	33.62	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	Existing	17.69	15	\$1.02	71%	100%	\$4.81	1,696.01	1,696.01	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$87.15	43.15	43.15	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$87.15	2.79	2.79	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	10,714.46	20	\$1,330.55	100%	100%	\$8.94	741.75	741.75	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	63%	100%	\$125.87	117.28	117.28	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	Existing	160.61	8	\$1.09	100%	100%	\$0.63	301.43	334.39	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	Existing	311.58	8	\$4.71	100%	100%	\$1.06	310.90	296.70	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	186.37	17	\$64.65	100%	100%	\$13.94	10,552.84	10,060.03	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	Existing	958.56	15	\$6.29	100%	100%	(\$1.53)	4,041.89	3,715.32	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	Existing	166.21	8	\$1.06	100%	100%	\$0.66	171.09	212.81	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	105.33	17	\$64.65	100%	100%	\$24.67	619.79	597.48	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	874.86	15	\$157.49	100%	100%	\$2.64	2,725.02	2,583.68	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	83%	100%	\$237.85	256.68	256.68	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	99%	100%	\$22.35	53.76	53.76	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	99%	100%	\$59.46	31.12	31.12	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	11%	100%	\$7.93	76.37	76.37	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	87%	100%	\$42.61	346.07	346.07	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	55%	100%	\$4.11	227.29	227.29	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	73%	100%	\$50.91	222.82	222.82	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Grocery	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	20%	100%	\$0.23	439.22	439.22	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	18.16	18.16	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	64%	10%	\$0.07	0.71	0.71	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	2.41	2.41	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	10.08	10.08	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	6.28	6.28	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	43.09	20	\$18.63	1%	100%	\$31.11	32.70	32.70	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	67.82	25	\$20.82	0%	100%	\$18.93	30.64	30.64	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	New	15.67	15	\$1.02	71%	100%	\$5.43	1,591.08	1,591.08	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$97.76	55.20	55.20	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$71.95	23.32	23.32	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$78.63	108.28	108.28	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$71.95	6.87	6.87	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$78.63	10.04	10.04	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	14,672.1 ₃	20	\$1,330.55	100%	100%	\$6.53	1,540.99	1,540.99	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	63%	100%	\$125.87	115.05	115.05	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	New	160.61	8	\$1.09	100%	100%	\$0.63	265.10	263.39	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	New	311.58	8	\$4.71	100%	100%	\$1.06	163.90	156.73	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Linear Lighting	lamps	New	186.37	17	\$64.65	100%	100%	\$13.94	9,006.75	8,681.44	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	New	958.56	15	\$6.29	100%	100%	(\$1.53)	3,910.13	3,677.60	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	New	166.21	8	\$1.06	100%	100%	\$0.66	102.68	108.37	USDOE SSL Projections - 2016

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Grocery	Exterior Lighting	Linear Lighting	lamps	New	105.33	17	\$64.65	100%	100%	\$24.67	575.14	560.35	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	New	874.86	15	\$157.49	100%	100%	\$2.64	2,837.60	2,736.48	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	83%	100%	\$237.85	241.90	241.90	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	99%	100%	\$22.35	46.17	46.17	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	99%	100%	\$59.46	29.66	29.66	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	11%	100%	\$7.93	71.50	71.50	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	87%	100%	\$42.61	321.39	321.39	COOK_FRY-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	55%	100%	\$4.11	206.63	206.63	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	73%	100%	\$50.91	247.34	247.34	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	20%	100%	\$0.23	471.67	471.67	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	12.38	12.38	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	64%	10%	\$0.07	0.48	0.48	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	1.35	1.35	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	6.53	6.53	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	4.75	4.75	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	53.62	20	\$18.63	17%	100%	\$25.01	1,924.71	1,924.71	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	73.25	25	\$20.82	67%	100%	\$17.05	12,039.98	12,039.98	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	Existing	18.72	15	\$1.02	11%	100%	\$4.55	532.06	532.06	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	Existing	267.11	15	\$210.81	0%	100%	\$66.17	20.90	20.90	PTAC-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	5.74	15	\$2.34	1%	100%	\$48.40	25.09	22.09	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	24.56	25	\$22.89	1%	100%	\$57.36	41.09	41.09	AEG BEST
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	2.20	15	\$2.34	1%	100%	\$48.40	5.04	4.64	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	5.62	25	\$22.89	1%	100%	\$57.36	13.80	13.80	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	33,953.36	20	\$1,330.55	100%	100%	\$2.82	4,185.65	4,185.65	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	4%	100%	\$125.87	21.46	21.46	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	Existing	101.78	8	\$1.09	100%	100%	\$0.70	877.65	825.63	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	Existing	171.07	8	\$4.71	100%	100%	\$1.92	408.26	389.40	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	Existing	164.71	17	\$64.65	100%	100%	\$15.85	15,429.54	14,725.68	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	Existing	949.99	15	\$6.29	100%	100%	(\$1.55)	8,253.15	7,598.60	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	Existing	87.39	8	\$1.06	100%	100%	\$0.85	44.00	43.36	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	Existing	108.14	17	\$64.65	100%	100%	\$24.15	244.47	235.90	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	Existing	873.60	15	\$157.49	100%	100%	\$2.64	1,872.69	1,775.71	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	50%	100%	\$237.85	43.71	43.71	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	90%	100%	\$22.35	55.68	55.68	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	90%	100%	\$59.46	16.07	16.07	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	70%	100%	\$7.93	698.69	698.69	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	81%	100%	\$42.61	463.14	463.14	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	53%	100%	\$4.11	319.95	319.95	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	53%	100%	\$50.91	235.71	235.71	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	53%	100%	\$0.23	1,696.27	1,696.27	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	112.23	112.23	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	2.66	2.66	CEL_PCLT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	14.92	14.92	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	12.41	12.41	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	7.75	7.75	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	New	39.43	20	\$18.63	17%	100%	\$34.01	1,493.30	1,493.30	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	New	50.84	25	\$20.82	67%	100%	\$24.57	9,811.64	9,811.64	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	New	13.96	15	\$1.02	11%	100%	\$6.10	430.49	430.49	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	New	239.07	15	\$210.81	0%	100%	\$60.35	49.36	44.84	PTAC-Cooling-AEG-v2-1
Health	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$401.71	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	New	5.50	15	\$2.34	1%	100%	\$53.10	25.56	23.44	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	New	24.56	25	\$22.89	1%	100%	\$57.36	50.04	50.04	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$401.71	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.07	15	\$2.34	1%	100%	\$53.10	2.67	2.53	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	New	5.62	25	\$22.89	1%	100%	\$57.36	16.92	16.92	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	New	25,519.03	20	\$1,330.55	100%	100%	\$3.75	5,210.63	5,210.63	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	4%	100%	\$125.87	21.62	21.62	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	New	101.78	8	\$1.09	100%	100%	\$0.70	646.61	587.52	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	New	171.07	8	\$4.71	100%	100%	\$1.92	217.88	208.11	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	New	164.71	17	\$64.65	100%	100%	\$15.85	13,514.77	13,039.53	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	New	949.99	15	\$6.29	100%	100%	(\$1.55)	7,585.27	7,108.67	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	New	87.39	8	\$1.06	100%	100%	\$0.85	26.28	23.96	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	New	108.14	17	\$64.65	100%	100%	\$24.15	232.43	226.62	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	New	873.60	15	\$157.49	100%	100%	\$2.64	2,020.02	1,949.07	USDOE SSL Projections - 2016
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	50%	100%	\$237.85	42.29	42.29	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	90%	100%	\$22.35	49.03	49.03	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	90%	100%	\$59.46	15.75	15.75	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	70%	100%	\$7.93	671.35	671.35	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	81%	100%	\$42.61	441.72	441.72	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	53%	100%	\$4.11	298.37	298.37	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	53%	100%	\$50.91	268.18	268.18	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	53%	100%	\$0.23	1,867.48	1,867.48	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	78.22	78.22	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	1.81	1.81	CEL_PCLT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	8.55	8.55	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	8.25	8.25	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	6.00	6.00	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	36.77	20	\$18.63	27%	100%	\$36.46	4,171.41	4,171.41	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	Existing	8.55	15	\$1.02	45%	100%	\$9.95	1,642.43	1,642.43	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	Existing	122.07	15	\$210.81	3%	100%	\$144.80	119.09	119.09	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	Existing	122.07	15	\$200.86	2%	100%	\$66.11	83.38	83.38	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	11.22	25	\$22.89	5%	100%	\$94.84	127.97	127.97	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	Existing	132.64	15	\$200.86	2%	100%	\$66.11	90.61	90.61	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.55	25	\$22.89	5%	100%	\$94.84	51.90	51.90	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Ventilation	Ventilation	1000 CFM	Existing	15,481.9 ₉	20	\$1,330.55	100%	100%	\$6.19	3,474.00	3,474.00	AEG-BEST
College	Water Heating	Water Heater	1 kBtu/hr	Existing	1.23	13	\$1.69	64%	100%	\$125.87	304.57	304.57	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	Existing	55.28	8	\$1.09	100%	100%	\$1.26	285.55	262.38	USDOE SSL Projections - 2016
College	Interior Lighting	Exempted Lighting	lamps	Existing	44.39	8	\$4.71	100%	100%	\$7.41	88.58	84.59	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	Existing	91.66	17	\$64.65	100%	100%	\$28.52	13,235.20	12,629.98	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	Existing	516.26	15	\$6.29	100%	100%	(\$2.86)	7,839.93	7,230.72	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	Existing	175.70	8	\$1.06	100%	100%	\$0.64	18.14	24.74	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	Existing	101.52	17	\$64.65	100%	100%	\$25.75	3,540.01	3,416.01	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	Existing	672.63	15	\$157.49	100%	100%	\$3.43	1,303.57	1,236.75	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	13%	100%	\$237.85	23.78	23.78	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	27%	100%	\$22.35	16.72	16.72	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	27%	100%	\$59.46	4.81	4.81	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	21%	100%	\$7.93	147.55	147.55	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	21%	100%	\$42.61	84.31	84.31	COOK_FRY-Food Preparation-RTF-v2.3-1
College	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	21%	100%	\$4.11	88.09	88.09	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	21%	100%	\$50.91	64.88	64.88	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	21%	100%	\$0.23	467.04	467.04	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	144.31	144.31	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	2.55	2.55	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	19.19	19.19	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	15.85	15.85	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	4.97	4.97	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	Existing	148.87	7	\$234.00	90%	100%	\$38.20	39.80	39.21	CPLPUMP-Miscellaneous-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Miscellaneous	Pool Heater	1 unit	Existing	500.00	2	\$1.00	36%	100%	\$1.11	1.13	1.13	TBD
College	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	New	23.33	20	\$2.19	27%	100%	\$46.25	3,264.39	3,264.39	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	New	6.11	15	\$1.02	45%	100%	\$13.92	1,323.51	1,323.51	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	New	109.25	15	\$210.81	3%	100%	\$161.78	122.57	122.57	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	New	109.25	15	\$200.86	2%	100%	\$58.83	205.06	186.19	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	New	11.22	25	\$22.89	5%	100%	\$94.84	160.24	160.24	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	New	131.03	15	\$200.86	2%	100%	\$58.83	231.20	210.90	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.55	25	\$22.89	5%	100%	\$94.84	64.99	64.99	AEG BEST
College	Ventilation	Ventilation	1000 CFM	New	15,673.7 ₉	20	\$1,330.55	100%	100%	\$6.11	5,673.75	5,673.75	AEG-BEST
College	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	64%	100%	\$125.87	320.16	320.16	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	New	55.28	8	\$1.09	100%	100%	\$1.26	282.49	261.08	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Interior Lighting	Exempted Lighting	lamps	New	44.39	8	\$4.71	100%	100%	\$7.41	46.23	44.22	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	New	91.66	17	\$64.65	100%	100%	\$28.52	12,211.18	11,787.47	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	New	516.26	15	\$6.29	100%	100%	(\$2.86)	8,124.40	7,664.60	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	New	175.70	8	\$1.06	100%	100%	\$0.64	10.39	11.68	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	New	101.52	17	\$64.65	100%	100%	\$25.75	3,502.16	3,414.99	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	New	672.63	15	\$157.49	100%	100%	\$3.43	1,477.23	1,426.56	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	13%	100%	\$237.85	24.00	24.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	27%	100%	\$22.35	15.32	15.32	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	27%	100%	\$59.46	4.92	4.92	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	21%	100%	\$7.93	147.73	147.73	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	21%	100%	\$42.61	83.94	83.94	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	21%	100%	\$4.11	85.58	85.58	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	21%	100%	\$50.91	76.80	76.80	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	21%	100%	\$0.23	535.18	535.18	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	104.19	104.19	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	1.81	1.81	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	11.40	11.40	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	10.99	10.99	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	4.00	4.00	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	New	148.87	7	\$234.00	90%	100%	\$38.20	40.29	40.05	CPLPUMP-Miscellaneous-RTF-v2.1-1
College	Miscellaneous	Pool Heater	1 unit	New	500.00	2	\$1.00	36%	100%	\$1.11	0.38	0.38	TBD
College	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	17.85	20	\$2.19	22%	100%	\$28.47	3,381.14	3,381.14	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	Existing	4.28	15	\$1.02	36%	100%	\$19.90	1,360.92	1,360.92	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	Existing	61.03	15	\$210.81	2%	100%	\$289.59	99.06	99.06	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	Existing	61.03	15	\$200.86	2%	100%	\$118.36	69.36	69.36	PTHP-Cooling-AEG-v2-1
School	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	5.61	25	\$22.89	4%	100%	\$178.11	106.48	106.48	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	Existing	81.25	15	\$200.86	2%	100%	\$118.36	92.33	92.33	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	2.79	25	\$22.89	4%	100%	\$178.11	52.90	52.90	AEG BEST
School	Ventilation	Ventilation	1000 CFM	Existing	7,583.36	20	\$1,330.55	100%	100%	\$12.63	3,504.14	3,504.14	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	50%	100%	\$125.87	244.34	244.34	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	Existing	82.77	8	\$1.09	100%	100%	\$1.54	536.71	732.48	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	Existing	229.36	8	\$4.71	100%	100%	\$1.43	852.78	814.15	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	Existing	68.84	17	\$64.65	100%	100%	\$37.88	18,929.86	18,062.66	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	Existing	372.84	15	\$6.29	100%	100%	(\$3.95)	9,115.06	8,396.71	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	Existing	60.39	8	\$1.06	100%	100%	\$0.96	16.14	14.20	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Exterior Lighting	Linear Lighting	lamps	Existing	101.92	17	\$64.65	100%	100%	\$25.58	6,511.79	6,286.23	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	Existing	635.49	15	\$157.49	100%	100%	\$3.64	1,157.70	1,100.50	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	33%	100%	\$237.85	127.86	127.86	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	66%	100%	\$22.35	89.55	89.55	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	66%	100%	\$59.46	25.92	25.92	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	65%	100%	\$7.93	458.93	458.93	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	59%	100%	\$42.61	237.80	237.80	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	52%	100%	\$4.11	221.11	221.11	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	52%	100%	\$50.91	162.92	162.92	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	52%	100%	\$0.23	1,172.20	1,172.20	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	179.49	179.49	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	4.26	4.26	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	23.85	23.85	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	39.86	39.86	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	36%	10%	\$0.02	1.83	1.83	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	Existing	148.87	7	\$234.00	6%	100%	\$38.20	6.68	6.58	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	Existing	500.00	2	\$1.00	1%	100%	\$1.11	0.04	0.04	TBD
School	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
School	Cooling	Air-Cooled Chiller	1 kbtu/h	New	11.66	20	\$2.19	22%	100%	\$13.53	2,477.46	2,477.46	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	New	3.06	15	\$1.02	36%	100%	\$27.85	1,030.36	1,030.36	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	New	54.63	15	\$210.81	2%	100%	\$323.56	95.43	95.43	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	New	54.63	15	\$200.86	2%	100%	\$124.85	66.81	66.81	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	New	5.61	25	\$22.89	4%	100%	\$178.11	125.19	125.19	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	New	80.26	15	\$200.86	2%	100%	\$124.85	98.16	98.16	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	New	2.79	25	\$22.89	4%	100%	\$178.11	62.20	62.20	AEG BEST
School	Ventilation	Ventilation	1000 CFM	New	7,677.32	20	\$1,330.55	100%	100%	\$12.48	5,359.00	5,359.00	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	50%	100%	\$125.87	239.70	239.70	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	New	82.77	8	\$1.09	100%	100%	\$1.54	502.80	552.07	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	New	229.36	8	\$4.71	100%	100%	\$1.43	428.18	409.38	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	New	68.84	17	\$64.65	100%	100%	\$37.88	16,572.27	15,999.81	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	New	372.84	15	\$6.29	100%	100%	(\$3.95)	8,952.05	8,440.56	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	New	60.39	8	\$1.06	100%	100%	\$0.96	10.61	9.23	USDOE SSL Projections - 2016
School	Exterior Lighting	Linear Lighting	lamps	New	101.92	17	\$64.65	100%	100%	\$25.58	6,025.54	5,875.98	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	New	635.49	15	\$157.49	100%	100%	\$3.64	1,236.16	1,195.23	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	33%	100%	\$237.85	120.49	120.49	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	66%	100%	\$22.35	76.91	76.91	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	66%	100%	\$59.46	24.70	24.70	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	65%	100%	\$7.93	429.70	429.70	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	59%	100%	\$42.61	220.83	220.83	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	52%	100%	\$4.11	201.01	201.01	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	52%	100%	\$50.91	180.85	180.85	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	52%	100%	\$0.23	1,258.81	1,258.81	COOK_STM-Food Preparation-RTF-v2.4-2
School	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	122.37	122.37	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	2.84	2.84	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	13.37	13.37	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	25.82	25.82	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	36%	10%	\$0.02	1.35	1.35	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	New	148.87	7	\$234.00	6%	100%	\$38.20	6.27	6.23	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	New	500.00	2	\$1.00	1%	100%	\$1.11	0.01	0.01	TBD
School	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	7.98	20	\$2.19	2%	100%	\$19.77	77.90	77.90	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	14.62	25	\$7.67	7%	100%	\$34.29	502.33	502.33	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	Existing	8.49	15	\$1.02	16%	100%	\$10.02	727.36	727.36	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	Existing	121.20	15	\$210.81	39%	100%	\$145.83	2,012.73	2,012.73	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	Existing	121.20	15	\$200.86	13%	100%	\$95.91	677.58	677.58	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	3.18	15	\$2.34	5%	100%	\$49.27	58.13	58.13	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	17.27	25	\$22.89	5%	100%	\$78.47	250.26	250.26	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	Existing	54.38	15	\$200.86	13%	100%	\$95.91	303.99	303.99	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.80	15	\$2.34	5%	100%	\$49.27	14.66	14.66	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	1.80	25	\$22.89	5%	100%	\$78.47	26.09	26.09	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	7,395.88	20	\$1,330.55	100%	100%	\$12.95	2,036.71	2,036.71	AEG-BEST
Lodging	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	50%	100%	\$125.87	657.19	657.19	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	Existing	50.78	8	\$1.09	100%	100%	\$1.50	3,229.89	3,130.38	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	Existing	258.27	8	\$4.71	100%	100%	\$1.27	2,730.46	2,598.49	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	76.51	17	\$64.65	100%	100%	\$34.19	5,172.91	4,944.66	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	Existing	682.44	15	\$6.29	100%	100%	(\$2.17)	4,087.85	3,781.63	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	Existing	55.92	8	\$1.06	100%	100%	\$0.98	158.50	136.39	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	106.03	17	\$64.65	100%	100%	\$24.67	233.68	225.99	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	811.63	15	\$157.49	100%	100%	\$2.82	14,300.34	13,546.53	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	19%	100%	\$237.85	74.81	74.81	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	59%	100%	\$22.35	81.12	81.12	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	59%	100%	\$59.46	47.44	47.44	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	14%	100%	\$7.93	192.01	192.01	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	21%	100%	\$42.61	167.81	167.81	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	30%	100%	\$4.11	248.63	248.63	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	30%	100%	\$50.91	183.32	183.32	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	30%	100%	\$0.23	1,317.69	1,317.69	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	45.80	45.80	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	2.74	2.74	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	6.06	6.06	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	25.80	25.80	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	58%	10%	\$0.02	3.75	3.75	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	148.87	7	\$234.00	76%	100%	\$38.20	66.74	65.82	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	500.00	2	\$1.00	27%	100%	\$1.11	1.59	1.59	TBD
Lodging	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	New	7.65	20	\$2.19	2%	100%	\$20.62	76.65	76.65	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	New	12.43	25	\$7.67	7%	100%	\$40.34	441.44	441.44	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	New	8.29	15	\$1.02	16%	100%	\$10.27	677.37	677.37	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	New	108.48	15	\$210.81	39%	100%	\$162.94	1,739.47	1,739.47	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	New	108.48	15	\$200.86	13%	100%	\$103.83	585.59	585.59	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	New	3.20	15	\$2.34	5%	100%	\$50.07	59.77	59.77	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	New	17.27	25	\$22.89	5%	100%	\$78.47	265.15	265.15	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	New	53.71	15	\$200.86	13%	100%	\$103.83	289.96	289.96	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.71	15	\$2.34	5%	100%	\$50.07	13.24	13.24	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	New	1.80	25	\$22.89	5%	100%	\$78.47	27.64	27.64	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	6,215.35	20	\$1,330.55	100%	100%	\$15.41	2,368.01	2,368.01	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	50%	100%	\$125.87	575.76	575.76	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	New	50.78	8	\$1.09	100%	100%	\$1.50	1,983.32	1,818.65	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	New	258.27	8	\$4.71	100%	100%	\$1.27	1,464.96	1,405.46	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	New	76.51	17	\$64.65	100%	100%	\$34.19	4,123.40	3,986.69	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	New	682.44	15	\$6.29	100%	100%	(\$2.17)	3,134.93	2,936.89	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	New	55.92	8	\$1.06	100%	100%	\$0.98	112.76	99.55	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	New	106.03	17	\$64.65	100%	100%	\$24.67	193.99	189.36	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	New	811.63	15	\$157.49	100%	100%	\$2.82	13,775.26	13,285.31	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	19%	100%	\$237.85	63.01	63.01	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	59%	100%	\$22.35	62.63	62.63	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	59%	100%	\$59.46	40.22	40.22	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	14%	100%	\$7.93	160.77	160.77	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	21%	100%	\$42.61	139.07	139.07	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	30%	100%	\$4.11	202.66	202.66	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	30%	100%	\$50.91	183.05	183.05	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	30%	100%	\$0.23	1,271.82	1,271.82	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	28.34	28.34	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	1.64	1.64	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	3.09	3.09	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	14.95	14.95	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	58%	10%	\$0.02	2.53	2.53	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	New	148.87	7	\$234.00	76%	100%	\$38.20	55.52	55.19	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	New	500.00	2	\$1.00	27%	100%	\$1.11	0.46	0.46	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	10.64	15	\$1.02	16%	100%	\$8.00	3,504.24	3,504.24	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	Existing	151.81	15	\$210.81	1%	100%	\$116.43	258.25	258.25	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	Existing	151.81	15	\$200.86	0%	100%	\$45.21	72.68	72.68	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	3.26	15	\$2.34	2%	100%	\$29.95	90.35	90.35	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	Existing	220.71	15	\$200.86	0%	100%	\$45.21	105.66	105.66	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	3.28	15	\$2.34	2%	100%	\$29.95	90.80	90.80	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	3,818.28	20	\$1,330.55	100%	100%	\$25.08	4,206.17	4,206.17	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	52%	100%	\$125.87	266.02	266.02	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	Existing	49.18	8	\$1.09	100%	100%	\$1.62	1,522.48	1,502.19	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	Existing	25.91	8	\$4.71	100%	100%	\$12.68	747.65	713.77	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	70.04	17	\$64.65	100%	100%	\$37.30	15,838.68	15,126.01	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	Existing	405.31	15	\$6.29	100%	100%	(\$3.66)	87,448.83	80,883.65	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	Existing	56.52	8	\$1.06	100%	100%	\$0.94	235.19	205.67	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	112.96	17	\$64.65	100%	100%	\$23.14	3,516.59	3,396.85	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	797.85	15	\$157.49	100%	100%	\$2.89	14,922.32	14,153.15	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	2%	100%	\$237.85	46.48	46.48	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	10%	100%	\$22.35	82.41	82.41	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	10%	100%	\$59.46	23.93	23.93	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	2%	100%	\$7.93	20.16	20.16	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	2%	100%	\$42.61	11.56	11.56	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	2%	100%	\$4.11	12.02	12.02	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	2%	100%	\$50.91	8.86	8.86	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	2%	100%	\$0.23	63.72	63.72	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	255.26	255.26	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	12.15	12.15	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	33.90	33.90	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	89%	10%	\$0.03	263.47	263.47	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	77%	10%	\$0.02	54.81	54.81	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	New	7.12	15	\$1.02	16%	100%	\$11.95	2,403.50	2,403.50	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	New	133.70	15	\$210.81	1%	100%	\$132.20	236.26	236.26	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	New	133.70	15	\$200.86	0%	100%	\$40.13	172.87	169.21	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.55	15	\$2.34	2%	100%	\$43.40	75.87	75.87	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	New	205.53	15	\$200.86	0%	100%	\$40.13	248.91	243.85	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.97	15	\$2.34	2%	100%	\$43.40	58.59	58.59	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	3,291.32	20	\$1,330.55	100%	100%	\$29.10	4,954.85	4,954.85	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	52%	100%	\$125.87	251.47	251.47	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	New	49.18	8	\$1.09	100%	100%	\$1.62	1,030.02	955.58	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	New	25.91	8	\$4.71	100%	100%	\$12.68	361.06	345.26	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Linear Lighting	lamps	New	70.04	17	\$64.65	100%	100%	\$37.30	13,244.31	12,788.54	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	New	405.31	15	\$6.29	100%	100%	(\$3.66)	82,196.40	77,666.22	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	New	56.52	8	\$1.06	100%	100%	\$0.94	124.04	105.38	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	112.96	17	\$64.65	100%	100%	\$23.14	3,146.75	3,069.82	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	New	797.85	15	\$157.49	100%	100%	\$2.89	15,130.40	14,597.06	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	2%	100%	\$237.85	42.22	42.22	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	10%	100%	\$22.35	68.36	68.36	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	10%	100%	\$59.46	21.95	21.95	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	2%	100%	\$7.93	18.20	18.20	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	2%	100%	\$42.61	10.34	10.34	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	2%	100%	\$4.11	10.54	10.54	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	2%	100%	\$50.91	9.50	9.50	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	2%	100%	\$0.23	66.09	66.09	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	168.72	168.72	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	7.82	7.82	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	18.42	18.42	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	89%	10%	\$0.03	164.17	164.17	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	77%	10%	\$0.02	39.90	39.90	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	26.33	20	\$2.19	15%	100%	\$43.20	168.22	168.22	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	44.27	25	\$20.82	2%	100%	\$29.01	27.10	27.10	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	9.38	15	\$1.02	20%	100%	\$9.08	73.37	73.37	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	Existing	133.84	15	\$210.81	1%	100%	\$132.06	4.96	4.96	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	Existing	133.84	15	\$200.86	0%	100%	\$52.50	0.50	0.50	PTHP-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	2.88	15	\$2.34	2%	100%	\$34.65	1.69	1.69	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	Existing	186.95	15	\$200.86	0%	100%	\$52.50	0.69	0.69	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	2.78	15	\$2.34	2%	100%	\$34.65	1.63	1.63	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	11,682.3 ₉	20	\$1,330.55	100%	100%	\$8.20	249.33	249.33	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBtu/hr	Existing	1.23	13	\$1.69	53%	100%	\$125.87	9.07	9.07	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	Existing	49.18	8	\$1.09	100%	100%	\$1.62	29.50	29.10	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	Existing	25.91	8	\$4.71	100%	100%	\$12.68	14.48	13.83	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	70.04	17	\$64.65	100%	100%	\$37.30	306.86	293.05	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	Existing	405.31	15	\$6.29	100%	100%	(\$3.66)	1,694.23	1,567.04	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	Existing	56.52	8	\$1.06	100%	100%	\$0.94	4.56	3.98	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	112.96	17	\$64.65	100%	100%	\$23.14	68.13	65.81	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	797.85	15	\$157.49	100%	100%	\$2.89	289.10	274.20	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	6,471.87	10	\$333.83	92%	0%	\$5.62	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	2%	100%	\$237.85	6.90	6.90	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

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Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	92%	100%	\$22.35	111.06	111.06	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	92%	100%	\$59.46	32.25	32.25	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	41%	100%	\$7.93	12.39	12.39	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	41%	100%	\$42.61	7.11	7.11	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	41%	100%	\$4.11	7.39	7.39	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	41%	100%	\$50.91	5.45	5.45	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	41%	100%	\$0.23	39.17	39.17	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	3.63	3.63	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	0.17	0.17	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	0.48	0.48	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	89%	10%	\$0.03	3.75	3.75	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1

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Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	77%	10%	\$0.02	0.78	0.78	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	New	17.86	20	\$2.19	15%	100%	\$8.84	112.81	112.81	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	New	23.20	25	\$7.67	2%	100%	\$43.58	19.45	19.45	AEG BEST
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	6.28	15	\$1.02	20%	100%	\$13.55	50.32	50.32	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	New	117.87	15	\$210.81	1%	100%	\$149.95	4.54	4.54	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	New	117.87	15	\$200.86	0%	100%	\$47.47	1.18	1.08	PTHP-Cooling-AEG-v2-1

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Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.25	15	\$2.34	2%	100%	\$50.08	1.20	1.20	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	New	174.09	15	\$200.86	0%	100%	\$47.47	1.63	1.50	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.67	15	\$2.34	2%	100%	\$50.08	0.89	0.89	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	10,070.10	20	\$1,330.55	100%	100%	\$9.51	293.71	293.71	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	53%	100%	\$125.87	8.57	8.57	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	New	49.18	8	\$1.09	100%	100%	\$1.62	19.96	18.51	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	New	25.91	8	\$4.71	100%	100%	\$12.68	7.00	6.69	USDOE SSL Projections - 2016

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Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	70.04	17	\$64.65	100%	100%	\$37.30	256.60	247.77	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	New	405.31	15	\$6.29	100%	100%	(\$3.66)	1,592.47	1,504.70	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	New	56.52	8	\$1.06	100%	100%	\$0.94	2.40	2.04	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	112.96	17	\$64.65	100%	100%	\$23.14	60.97	59.47	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	797.85	15	\$157.49	100%	100%	\$2.89	293.14	282.80	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	6,471.87	10	\$333.83	92%	0%	\$5.62	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	2%	100%	\$237.85	6.27	6.27	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	92%	100%	\$22.35	92.12	92.12	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	92%	100%	\$59.46	29.58	29.58	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	41%	100%	\$7.93	11.19	11.19	COOK_OVN-Food Preparation-RTF-v2.3-1

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Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	41%	100%	\$42.61	6.36	6.36	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	41%	100%	\$4.11	6.48	6.48	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	41%	100%	\$50.91	5.84	5.84	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	41%	100%	\$0.23	40.62	40.62	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	2.40	2.40	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	0.11	0.11	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	0.26	0.26	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	89%	10%	\$0.03	2.33	2.33	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	77%	10%	\$0.02	0.57	0.57	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1

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Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	78.34	20	\$18.63	15%	100%	\$17.12	1,247.46	1,247.46	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	95.85	25	\$20.82	9%	100%	\$13.00	922.37	922.37	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	Existing	29.40	15	\$1.02	48%	100%	\$2.90	1,563.10	1,563.10	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	Existing	419.56	15	\$210.81	3%	100%	\$42.13	92.82	92.82	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	Existing	419.56	15	\$200.86	1%	100%	\$38.17	29.44	29.44	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	9.02	15	\$2.34	15%	100%	\$38.28	465.51	458.17	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	38.65	25	\$22.89	8%	100%	\$50.75	314.18	314.18	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	Existing	21.67	15	\$200.86	1%	100%	\$38.17	1.52	1.52	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.32	15	\$2.34	15%	100%	\$38.28	8.59	8.50	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.86	25	\$22.89	8%	100%	\$50.75	11.24	11.24	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	87,190.48	20	\$1,330.55	100%	100%	\$1.10	3,678.64	3,678.64	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	45%	100%	\$125.87	7.29	7.29	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	Existing	72.95	8	\$1.09	100%	100%	\$1.25	78.50	86.05	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	Existing	110.36	8	\$4.71	100%	100%	\$2.98	65.65	62.67	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	88.21	17	\$64.65	100%	100%	\$29.65	2,315.21	2,211.73	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	Existing	538.20	15	\$6.29	100%	100%	(\$2.74)	1,235.49	1,138.85	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	Existing	163.99	8	\$1.06	100%	100%	\$0.66	10.62	13.88	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	99.59	17	\$64.65	100%	100%	\$26.26	110.06	106.27	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	884.06	15	\$157.49	100%	100%	\$2.61	475.69	451.65	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	14%	100%	\$237.85	0.85	0.85	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	5%	100%	\$22.35	0.11	0.11	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	5%	100%	\$59.46	0.03	0.03	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	4%	100%	\$7.93	0.82	0.82	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	4%	100%	\$42.61	0.47	0.47	COOK_FRY-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	4%	100%	\$4.11	0.49	0.49	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	4%	100%	\$50.91	0.36	0.36	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	4%	100%	\$0.23	2.60	2.60	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	169.41	169.41	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	4.03	4.03	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	22.50	22.50	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.03	1,891.75	1,891.75	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	10%	\$0.02	1.92	1.92	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	New	52.45	20	\$18.63	15%	100%	\$25.56	837.73	837.73	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	New	62.35	25	\$20.82	9%	100%	\$19.98	665.81	665.81	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	New	19.69	15	\$1.02	48%	100%	\$4.32	1,072.11	1,072.11	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	New	976.33	15	\$421.63	3%	100%	\$36.21	234.21	234.21	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	New	976.33	15	\$401.71	1%	100%	\$32.75	74.29	74.29	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	New	7.04	15	\$2.34	15%	100%	\$47.73	390.89	362.05	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	New	38.65	25	\$22.89	8%	100%	\$50.75	358.23	358.23	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	New	52.14	15	\$401.71	1%	100%	\$32.75	3.97	3.97	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.19	15	\$2.34	15%	100%	\$47.73	5.54	5.27	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.86	25	\$22.89	8%	100%	\$50.75	12.83	12.83	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	75,157.32	20	\$1,330.55	100%	100%	\$1.27	4,993.78	4,993.78	AEG-BEST
Data Center	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	45%	100%	\$125.87	6.89	6.89	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	New	72.95	8	\$1.09	100%	100%	\$1.25	43.43	42.33	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	New	110.36	8	\$4.71	100%	100%	\$2.98	32.40	30.97	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Interior Lighting	Linear Lighting	lamps	New	88.21	17	\$64.65	100%	100%	\$29.65	1,913.41	1,847.23	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	New	538.20	15	\$6.29	100%	100%	(\$2.74)	1,029.46	962.77	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	New	163.99	8	\$1.06	100%	100%	\$0.66	5.62	6.11	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	New	99.59	17	\$64.65	100%	100%	\$26.26	98.64	96.20	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	New	884.06	15	\$157.49	100%	100%	\$2.61	479.38	462.71	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	14%	100%	\$237.85	0.77	0.77	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	5%	100%	\$22.35	0.09	0.09	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	5%	100%	\$59.46	0.03	0.03	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	4%	100%	\$7.93	0.74	0.74	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	4%	100%	\$42.61	0.42	0.42	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	4%	100%	\$4.11	0.43	0.43	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	4%	100%	\$50.91	0.39	0.39	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	4%	100%	\$0.23	2.70	2.70	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	111.98	111.98	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	2.60	2.60	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	12.22	12.22	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.03	1,181.38	1,181.38	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	10%	\$0.02	1.38	1.38	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Data Center	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	10.62	20	\$2.19	10%	100%	\$14.86	3,594.66	3,594.66	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	9.34	25	\$7.67	5%	100%	\$73.79	1,875.38	1,875.38	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	4.26	15	\$1.02	57%	100%	\$19.98	8,657.34	8,657.34	AEG BEST
Miscellaneous	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	5.60	25	\$22.89	1%	100%	\$204.04	101.74	101.74	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	1.73	25	\$22.89	1%	100%	\$204.04	31.44	31.44	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	3,799.12	20	\$1,330.55	100%	100%	\$25.21	7,050.67	7,050.67	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	53%	100%	\$125.87	927.11	927.11	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	Existing	84.35	8	\$1.09	100%	100%	\$1.07	4,476.28	4,722.36	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Interior Lighting	Exempted Lighting	lamps	Existing	195.11	8	\$4.71	100%	100%	\$1.67	4,439.32	4,181.12	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	112.03	17	\$64.65	100%	100%	\$23.33	50,820.43	48,496.35	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	Existing	773.45	15	\$6.29	100%	100%	(\$1.95)	45,589.38	42,460.66	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	Existing	136.12	8	\$1.06	100%	100%	\$0.71	516.42	622.81	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	112.67	17	\$64.65	100%	100%	\$23.20	1,594.07	1,538.04	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	927.59	15	\$157.49	100%	100%	\$2.49	13,233.37	12,550.32	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	12%	100%	\$237.85	216.48	216.48	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	22%	100%	\$22.35	136.81	136.81	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	22%	100%	\$59.46	78.66	78.66	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	59%	100%	\$7.93	814.31	814.31	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	30%	100%	\$42.61	236.19	236.19	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	15%	100%	\$4.11	127.18	127.18	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	15%	100%	\$50.91	93.67	93.67	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	15%	100%	\$0.23	674.33	674.33	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	350.71	350.71	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.07	20.67	20.67	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.08	46.64	46.64	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	66%	10%	\$0.03	147.51	147.51	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	28%	10%	\$0.02	13.93	13.93	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	148.87	7	\$234.00	4%	100%	\$38.20	9.21	9.07	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	500.00	2	\$1.00	1%	100%	\$1.11	0.16	0.16	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	New	8.98	20	\$2.19	10%	100%	\$17.58	3,341.12	3,341.12	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	New	7.43	25	\$7.67	5%	100%	\$67.47	1,408.28	1,408.28	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	3.07	15	\$1.02	57%	100%	\$27.74	7,028.28	7,028.28	AEG BEST
Miscellaneous	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	New	5.60	25	\$22.89	1%	100%	\$204.04	127.39	127.39	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	New	1.73	25	\$22.89	1%	100%	\$204.04	39.37	39.37	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	3,520.41	20	\$1,330.55	100%	100%	\$27.21	10,219.64	10,219.64	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	53%	100%	\$125.87	974.58	974.58	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	New	84.35	8	\$1.09	100%	100%	\$1.07	3,329.55	3,198.68	USDOE SSL Projections - 2016

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Miscellaneous	Interior Lighting	Exempted Lighting	lamps	New	195.11	8	\$4.71	100%	100%	\$1.67	2,712.77	2,575.35	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	112.03	17	\$64.65	100%	100%	\$23.33	46,606.79	44,979.74	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	New	773.45	15	\$6.29	100%	100%	(\$1.95)	42,768.79	40,407.39	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	New	136.12	8	\$1.06	100%	100%	\$0.71	294.04	303.17	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	112.67	17	\$64.65	100%	100%	\$23.20	1,576.63	1,537.24	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	927.59	15	\$157.49	100%	100%	\$2.49	13,512.12	12,994.18	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	12%	100%	\$237.85	218.51	218.51	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	22%	100%	\$22.35	125.38	125.38	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	22%	100%	\$59.46	80.56	80.56	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	59%	100%	\$7.93	815.28	815.28	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	30%	100%	\$42.61	235.16	235.16	COOK_FRY-Food Preparation-RTF-v2.3-1

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Miscellaneous	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	15%	100%	\$4.11	123.57	123.57	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	15%	100%	\$50.91	110.88	110.88	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Miscellaneous	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	15%	100%	\$0.23	772.71	772.71	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	253.21	253.21	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.07	14.69	14.69	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.08	27.70	27.70	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	66%	10%	\$0.03	101.51	101.51	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	28%	10%	\$0.02	10.88	10.88	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	148.87	7	\$234.00	4%	100%	\$38.20	9.32	9.26	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	500.00	2	\$1.00	1%	100%	\$1.11	0.06	0.06	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

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Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.13	45	\$0.84	15%	35%	\$43.97	461.49	478.49	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.94	45	\$0.84	15%	35%	\$43.97	1,783.74	1,804.27	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$43.97	35.95	37.24	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.24	20	\$0.86	15%	35%	\$274.41	1,225.26	1,270.38	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$274.41	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$274.41	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.81	20	\$0.81	45%	50%	\$9,609.90	695.21	720.81	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.47	20	\$0.81	45%	50%	\$9,609.90	-223.70	-226.28	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.33	20	\$0.81	45%	50%	\$9,609.90	-306.38	-317.30	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.43	45	\$1.70	15%	35%	\$47.15	-1,266.46	-1,313.09	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.47	45	\$1.70	15%	35%	\$47.15	2,378.32	2,405.69	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	1.02	45	\$1.70	15%	35%	\$47.15	3,257.31	3,373.45	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	9.68	18	\$0.59	15%	50%	\$9,999.00	498.52	516.87	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-8.50	18	\$0.59	15%	50%	\$9,999.00	-240.77	-243.54	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.86	18	\$0.59	15%	50%	\$9,999.00	-329.76	-341.51	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	10.83	30	\$37.07	48%	48%	\$66.81	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2

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Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.37	30	\$37.07	48%	48%	\$66.81	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	6.90	30	\$37.07	48%	48%	\$66.81	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,519.07	10	\$914.46	15%	75%	\$18.92	692.85	733.01	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	670.50	15	\$248.07	15%	75%	\$32.53	11,705.83	12,384.34	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,426.49	15	\$263.92	15%	75%	\$16.27	2,490.41	2,634.76	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	38.71	15	\$248.07	15%	75%	\$577.56	245.72	269.27	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	46,637.82	10	\$1,796.53	15%	75%	\$4.51	2,128.52	2,332.48	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	201.60	5	\$267.96	18%	75%	\$256.45	10,326.45	10,727.96	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.55	15	\$0.05	5%	15%	\$8.14	3,073.14	3,248.89	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.55	14	\$5.25	3%	75%	\$131.23	7,112.09	7,235.47	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.58	18	\$0.26	15%	20%	\$35.17	1,632.90	1,691.12	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	771.53	15	\$189.00	13%	25%	\$21.55	2,008.47	2,120.70	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	278.02	15	\$1,273.23	13%	50%	\$402.85	2,274.94	2,402.07	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.36	15	\$0.10	13%	50%	\$24.34	7,994.80	8,441.55	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	22%	30%	\$586.34	163.24	172.36	VENT_DCV-Ventilation-7PLN-v5-5

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Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.94	15	\$0.76	7%	10%	\$29.95	746.44	759.39	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.26	15	\$0.76	7%	10%	\$29.95	1,997.12	2,108.72	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,004.87	15	\$7,501.21	15%	30%	\$43.33	4,353.61	4,602.60	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,910.32	15	\$7,501.21	15%	30%	\$43.33	3,551.69	3,613.30	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	212.09	219.13	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	Existing	316.82	15	\$410.87	15%	45%	\$111.50	7,099.06	7,232.44	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	306.04	15	\$698.92	15%	75%	\$196.36	13,225.46	13,413.24	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	488.87	20	\$1,370.94	15%	25%	\$121.47	192.97	203.05	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	350.87	20	\$1,370.94	15%	25%	\$121.47	1,538.07	1,538.07	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.76	5	\$0.75	30%	40%	\$83.34	3,925.91	4,070.48	STAT_WIFI-AII-7PLN-v2-1
Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.58	5	\$0.75	30%	40%	\$83.34	1,653.58	1,672.62	STAT_WIFI-AII-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.40	5	\$0.75	30%	40%	\$83.34	2,264.72	2,345.47	STAT_WIFI-AII-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	142.34	10	\$8.63	25%	65%	\$6.79	398.12	409.63	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	156.41	10	\$17.56	25%	65%	\$12.58	218.73	225.05	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	38.76	10	\$16.82	25%	65%	\$48.64	53.44	54.79	CDHW_TSRVLV-Water Heating-RTF-v1.3-1

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Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$6.29	240.03	243.68	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	547.69	15	\$15.38	16%	75%	\$2.42	931.42	955.03	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	583.38	4	\$75.87	25%	40%	\$30.28	603.32	618.61	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	506.28	519.12	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.76	1,612.01	1,652.87	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.36	3%	23%	\$81.98	6,138.55	6,392.97	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.55	15	\$0.60	3%	23%	\$96.61	8,593.97	8,950.16	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	147.71	15	\$56.14	1%	3%	\$34.99	164.60	182.61	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.57	15	\$65.99	1%	3%	\$115.57	7.08	7.85	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,801.96	11	\$26.48	15%	30%	\$1.02	2,542.41	2,705.25	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	286.92	16	\$1,864.95	5%	15%	\$555.20	1,735.59	1,846.76	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.62	9	\$0.65	15%	25%	\$50.35	3,947.67	4,240.66	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	103.94	8	\$56.85	15%	25%	\$75.26	2,098.22	2,253.94	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	129.97	7	\$3,486.31	15%	30%	\$4,091.41	3,935.41	4,227.49	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	20.55	12	\$50.74	0%	0%	\$248.38	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	4.56	4	\$24.51	0%	0%	\$1,306.13	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	30.50	15	\$347.21	0%	0%	\$1,003.54	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	27.21	2	\$10.74	0%	0%	\$258.25	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.72	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	12.63	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	95.80	15	\$305.13	0%	0%	\$280.79	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	383.64	15	\$539.09	0%	0%	\$123.88	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	806.04	10	\$449.00	0%	0%	\$63.78	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	46.18	16	\$153.90	0%	0%	\$283.53	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	16.61	15	\$135.00	0%	0%	\$717.51	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	160.94	16	\$105.92	0%	0%	\$63.36	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2

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Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	123.90	10	\$521.11	0%	0%	\$545.59	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	87.28	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	163.30	12	\$605.15	0%	0%	\$374.94	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.17	8	\$15.90	0%	0%	\$232.80	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.95	8	\$3.87	0%	0%	\$549.71	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.32	5	\$49.37	0%	0%	\$2,908.70	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,625.83	5	\$288.64	25%	75%	\$34.87	367.60	380.46	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	6,855.47	18	\$8,815.42	25%	50%	\$102.34	3,880.09	4,018.43	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	338.96	15	\$335.00	0%	0%	\$50.55	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	235.60	15	\$335.00	0%	0%	\$50.55	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	117.38	4	\$37.32	10%	50%	\$68.40	6,958.31	6,349.63	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.05	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.33	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.33	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.33	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$15.35	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	8,321.21	18	\$4,231.40	0%	0%	\$40.47	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.84	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	145.75	7	\$423.28	0%	0%	\$424.54	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$424.54	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$424.54	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	22,900.25	15	\$1,114.41	0%	0%	\$4.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$4.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6

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Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	8,420.05	6	\$37.07	1%	3%	\$0.71	752.29	752.29	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.05	20	\$0.48	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	1.06	25	\$4.24	0%	0%	\$68.24	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	1.08	25	\$4.24	0%	0%	\$68.24	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.24	0%	0%	\$68.24	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.24	0%	0%	\$68.24	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.78	25	\$4.24	0%	0%	\$68.24	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.39	25	\$4.24	0%	0%	\$68.24	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.24	3	\$0.12	3%	14%	\$36.40	1,464.86	1,548.64	COM_SEM-HVAC-AEG-1
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.12	3%	14%	\$36.40	616.99	627.70	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.12	3%	14%	\$36.40	845.03	892.25	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.12	3%	14%	\$36.40	132.48	135.84	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.12	3%	14%	\$36.40	840.49	922.19	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.12	3%	14%	\$36.40	438.77	471.33	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.12	3%	14%	\$36.40	64.38	66.60	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.16	3	\$0.12	3%	14%	\$36.40	1,283.43	1,171.16	COM_SEM-Office Equipment-AEG-1

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Large Office	Cooling	Commissioning	sqft	Existing	0.33	3	\$0.53	0%	0%	\$157.74	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	Existing	0.25	3	\$0.53	0%	0%	\$157.74	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	Existing	0.17	3	\$0.53	0%	0%	\$157.74	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.53	0%	0%	\$157.74	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.15	3	\$0.53	0%	0%	\$157.74	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.53	0%	0%	\$157.74	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.53	0%	0%	\$157.74	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.33	3	\$0.17	11%	59%	\$50.07	8,850.63	9,356.81	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.17	11%	59%	\$50.07	3,727.85	3,792.52	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.17	3	\$0.17	11%	59%	\$50.07	5,105.62	5,390.92	COM_RCX-HVAC-AEG-1
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.17	11%	59%	\$50.07	266.82	273.58	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.17	11%	59%	\$50.07	4,231.82	4,643.20	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.17	11%	59%	\$50.07	2,209.18	2,373.14	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.17	11%	59%	\$50.07	648.26	670.71	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.11	10	\$0.09	0%	0%	\$97.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.07	10	\$1.12	0%	0%	\$1,912.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.24	0%	0%	\$4,195.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	Existing	108.77	16	\$75.53	20%	75%	\$56.12	118.03	118.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	11,125.64	25	\$18,394.24	0%	75%	\$111.17	6,220.42	6,256.47	WHP Analysis
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$141.40	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.33	45	\$0.84	15%	50%	\$141.40	537.39	537.74	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$141.40	17.74	17.73	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.31	20	\$0.86	15%	50%	\$201.21	1,464.89	1,466.70	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$201.21	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$201.21	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.81	45%	50%	\$9,999.00	49.04	49.10	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.17	20	\$0.81	45%	50%	\$9,999.00	-39.32	-39.34	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.81	45%	50%	\$9,999.00	-54.66	-54.66	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$47.88	-17.16	-17.19	Building Energy Simulation Tool

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Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	1.21	45	\$1.70	15%	50%	\$47.88	437.39	437.67	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.80	45	\$1.70	15%	50%	\$47.88	608.07	608.00	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	21.87	18	\$0.59	15%	35%	\$1.17	326.04	326.46	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	9.92	18	\$0.59	15%	35%	\$1.17	77.12	77.17	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.53	18	\$0.59	15%	35%	\$1.17	107.21	107.20	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	29.06	30	\$37.07	66%	66%	\$20.10	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	61.21	30	\$37.07	66%	66%	\$20.10	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	23.22	30	\$37.07	66%	66%	\$20.10	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	4,200.30	10	\$914.46	15%	75%	\$23.71	127.82	127.82	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	510.29	15	\$248.07	15%	75%	\$40.76	2,682.36	2,682.36	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,085.63	15	\$263.92	15%	75%	\$20.38	570.67	570.67	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	37.30	15	\$248.07	15%	75%	\$557.55	74.73	74.73	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	32,211.22	10	\$1,796.53	15%	75%	\$6.07	373.59	373.59	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	137.68	5	\$267.96	18%	75%	\$366.05	973.78	978.39	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.38	15	\$0.05	10%	15%	\$11.27	317.83	318.74	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.23	14	\$5.25	6%	75%	\$142.74	1,707.26	1,709.84	RES_HRV-Cooling-7PLN-v1-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.50	18	\$0.26	15%	20%	\$38.74	721.21	721.12	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	3,231.68	15	\$189.00	19%	25%	\$4.90	248.31	248.25	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	1,164.54	15	\$1,273.23	19%	50%	\$91.62	493.22	493.10	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.02	19%	50%	\$5.53	1,733.33	1,732.90	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	22%	30%	\$645.76	42.49	42.48	VENT_DCV-Ventilation-7PLN-v5-5
Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.98	15	\$0.70	7%	10%	\$38.53	220.31	220.64	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.55	15	\$0.70	7%	10%	\$38.53	262.70	262.64	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,161.20	15	\$7,501.21	15%	30%	\$51.48	900.50	903.10	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,109.00	15	\$7,501.21	15%	30%	\$51.48	914.66	916.01	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	New	5.59	3	\$33.20	15%	45%	\$1,752.85	9.84	9.94	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	New	205.15	15	\$410.87	15%	45%	\$169.62	2,135.17	2,140.76	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	198.17	15	\$698.92	15%	75%	\$298.70	4,797.52	4,806.09	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	390.39	20	\$1,370.94	15%	25%	\$129.48	58.71	58.71	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	371.78	20	\$1,370.94	15%	25%	\$129.48	565.36	565.36	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.53	5	\$0.75	30%	40%	\$100.08	434.26	435.39	STAT_WIFI-All-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.53	5	\$0.75	30%	40%	\$100.08	227.73	228.04	STAT_WIFI-AII-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$100.08	316.60	316.52	STAT_WIFI-AII-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	45.35	10	\$8.63	25%	65%	\$20.72	75.86	75.86	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	49.83	10	\$17.56	25%	65%	\$38.36	41.68	41.68	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	12.35	10	\$16.82	25%	65%	\$148.34	11.90	11.90	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$6.40	85.62	85.62	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	523.49	15	\$15.38	1%	75%	\$2.46	321.61	321.61	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	185.87	4	\$75.87	25%	40%	\$92.36	65.78	65.78	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	29.37	29.37	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.39	456.91	456.91	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.36	15	\$0.36	11%	23%	\$85.00	3,306.03	3,356.87	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.50	15	\$0.60	11%	23%	\$100.17	4,628.44	4,699.61	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	135.85	15	\$56.14	1%	3%	\$36.29	38.58	40.14	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	0.00	15	\$65.99	1%	3%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,594.16	11	\$26.48	15%	30%	\$1.05	598.35	609.18	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	265.64	16	\$1,864.95	5%	15%	\$571.36	491.01	499.21	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.49	9	\$0.65	15%	25%	\$52.58	809.11	827.64	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fict	New	95.33	8	\$56.85	15%	25%	\$78.59	395.29	404.60	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fict	New	119.20	7	\$3,486.31	15%	30%	\$4,272.25	673.15	689.46	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	19.35	12	\$50.74	0%	0%	\$252.33	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.26	4	\$24.51	0%	0%	\$1,336.51	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	28.61	15	\$347.21	0%	0%	\$1,021.00	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	23.01	2	\$10.74	0%	0%	\$299.24	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.68	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	11.85	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	89.87	15	\$305.13	0%	0%	\$285.68	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

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Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	359.92	15	\$539.09	0%	0%	\$126.03	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	756.21	10	\$449.00	0%	0%	\$64.89	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	43.28	16	\$153.90	0%	0%	\$288.73	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	15.56	15	\$135.00	0%	0%	\$730.67	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	145.67	16	\$105.92	0%	0%	\$66.78	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	112.13	10	\$521.11	0%	0%	\$575.03	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.64	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	153.21	12	\$5,648.09	0%	0%	\$3,560.35	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.61	8	\$15.90	0%	0%	\$236.77	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.89	8	\$3.87	0%	0%	\$559.08	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.12	5	\$49.37	0%	0%	\$2,958.85	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,517.97	5	\$288.64	25%	75%	\$35.53	48.67	48.67	VEND_CTRL-Miscellaneous-SCE-17R0-41

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Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	5,929.59	18	\$8,815.42	25%	50%	\$112.71	1,713.74	1,713.53	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	270.67	15	\$335.00	0%	0%	\$54.02	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	249.21	15	\$335.00	0%	0%	\$54.02	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	113.94	4	\$37.32	10%	50%	\$70.04	738.21	672.05	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.05	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.15	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.15	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.15	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$7.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	7,197.38	18	\$4,231.40	0%	0%	\$44.57	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

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Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.76	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	139.31	7	\$423.28	0%	0%	\$431.61	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$431.61	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$431.61	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	21,888.37	15	\$1,114.41	0%	0%	\$4.27	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$4.27	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,806.68	6	\$37.07	1%	3%	\$2.12	208.02	208.02	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.05	20	\$0.43	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	New	1.06	25	\$4.24	10%	30%	\$65.43	4,254.54	4,258.59	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	New	1.07	25	\$4.24	10%	30%	\$65.43	2,231.13	2,232.22	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.70	25	\$4.24	10%	30%	\$65.43	3,101.75	3,101.46	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$65.43	514.73	514.73	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.79	25	\$4.24	10%	30%	\$65.43	12,980.65	13,191.53	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.40	25	\$4.24	10%	30%	\$65.43	5,048.50	5,093.49	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	New	0.16	3	\$0.08	3%	14%	\$29.87	92.23	92.68	COM_SEM-HVAC-AEG-1

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Large Office	Heating	Strategic Energy Management	sqft	New	0.17	3	\$0.08	3%	14%	\$29.87	48.37	48.49	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.08	3%	14%	\$29.87	67.24	67.21	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.08	3%	14%	\$29.87	11.16	11.16	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.08	3%	14%	\$29.87	70.35	74.04	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.08	3%	14%	\$29.87	36.48	37.52	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.08	3%	14%	\$29.87	5.43	5.45	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.15	3	\$0.08	3%	14%	\$29.87	105.18	95.53	COM_SEM-Office Equipment-AEG-1
Large Office	Cooling	Commissioning	sqft	New	0.23	3	\$0.36	11%	59%	\$125.13	3,289.15	3,294.95	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	New	0.23	3	\$0.36	11%	59%	\$125.13	1,724.87	1,726.44	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	New	0.15	3	\$0.36	11%	59%	\$125.13	2,397.94	2,397.56	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.36	11%	59%	\$125.13	132.64	132.64	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.36	11%	59%	\$125.13	8,362.70	8,566.92	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$0.36	11%	59%	\$125.13	3,252.46	3,295.90	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.36	11%	59%	\$125.13	841.30	842.13	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	New	0.23	3	\$0.12	0%	0%	\$39.72	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	New	0.23	3	\$0.12	0%	0%	\$39.72	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.12	0%	0%	\$39.72	0.00	0.00	COM_RCX-HVAC-AEG-1

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Large Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.12	0%	0%	\$39.72	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.12	0%	0%	\$39.72	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.12	0%	0%	\$39.72	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.12	0%	0%	\$39.72	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$101.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.06	10	\$1.12	0%	0%	\$1,945.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.02	3	\$0.24	0%	0%	\$4,268.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	New	108.77	16	\$75.53	20%	75%	\$56.12	31.25	31.25	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	11,739.74	25	\$18,061.14	0%	75%	\$100.56	3,294.41	3,294.41	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$0.84	15%	35%	\$83.49	1,611.81	1,668.60	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$0.84	15%	35%	\$83.49	1,490.25	1,518.56	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$83.49	248.50	251.85	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.41	20	\$0.86	15%	35%	\$160.65	893.36	924.83	Building Energy Simulation Tool

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Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$160.65	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$160.65	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.59	20	\$0.81	45%	50%	\$217.95	1,305.43	1,351.42	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$217.95	-248.38	-253.09	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$217.95	-148.13	-150.12	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.03	45	\$1.70	15%	35%	\$631.83	-982.56	-1,017.18	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.15	45	\$1.70	15%	35%	\$631.83	1,987.00	2,024.75	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.04	45	\$1.70	15%	35%	\$631.83	1,185.04	1,200.99	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.33	18	\$0.59	15%	50%	\$9,999.00	279.01	288.84	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.38	18	\$0.59	15%	50%	\$9,999.00	-187.30	-190.85	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.19	18	\$0.59	15%	50%	\$9,999.00	-111.70	-113.21	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	1.01	30	\$37.07	48%	48%	\$771.83	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	1.78	30	\$37.07	48%	48%	\$771.83	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.24	30	\$37.07	48%	48%	\$771.83	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	219.95	5	\$267.96	18%	75%	\$233.44	9,718.20	10,015.51	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.59	15	\$0.05	5%	15%	\$7.52	2,841.91	2,997.63	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.20	14	\$5.25	3%	75%	\$111.86	5,941.90	6,114.23	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.23	18	\$0.26	15%	20%	\$84.99	594.06	602.06	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	72.90	15	\$189.00	13%	25%	\$221.55	730.70	746.18	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	26.27	15	\$1,273.23	13%	25%	\$4,141.85	263.31	268.89	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.14	15	\$0.42	13%	25%	\$250.21	925.34	944.94	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	2%	56%	\$1,416.93	412.69	421.43	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.11	15	\$0.76	1%	19%	\$40.27	4,333.72	4,459.40	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.51	15	\$0.76	1%	19%	\$40.27	5,049.09	5,156.03	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,491.67	15	\$7,501.21	15%	15%	\$38.09	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,557.60	15	\$7,501.21	15%	15%	\$38.09	0.00	0.00	HVLS-Heating-AEG-1

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Small Office	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	270.97	279.95	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	Existing	334.76	15	\$410.87	15%	45%	\$105.53	9,583.12	9,763.17	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	323.37	15	\$698.92	15%	75%	\$185.83	17,853.23	18,106.72	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	505.99	20	\$1,370.94	15%	75%	\$111.18	944.62	1,038.86	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	431.58	20	\$1,370.94	15%	75%	\$111.18	6,751.15	6,751.15	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.82	5	\$0.75	30%	40%	\$86.67	3,630.53	3,758.44	STAT_WIFI-All-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.69	5	\$0.75	30%	40%	\$86.67	1,381.51	1,407.76	STAT_WIFI-All-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.16	5	\$0.75	30%	40%	\$86.67	823.93	835.02	STAT_WIFI-All-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	25.24	10	\$8.63	25%	65%	\$38.31	403.99	415.66	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	27.74	10	\$17.56	25%	65%	\$70.93	221.95	228.37	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	6.87	10	\$16.82	25%	65%	\$274.26	54.23	55.60	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	0%	0%	\$6.29	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	97.29	15	\$15.38	16%	75%	\$13.64	946.71	970.70	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	103.45	4	\$75.87	25%	40%	\$170.77	612.20	627.72	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	513.74	526.76	DHW_STBK-Water Heating-ILTRM-v4.0-4

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Small Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.96	20	\$258.33	1%	30%	\$1,476.92	1,636.69	1,678.18	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.35	15	\$0.36	3%	23%	\$91.74	4,724.90	4,922.44	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.49	15	\$0.60	3%	23%	\$108.12	6,614.86	6,891.42	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	98.56	15	\$56.14	1%	3%	\$52.31	158.17	175.26	CLTG_EXITLEC-Interior Lighting-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.59	15	\$65.99	1%	3%	\$115.25	10.33	11.45	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,504.50	11	\$26.48	15%	30%	\$1.14	1,979.26	2,085.03	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	256.46	16	\$1,864.95	5%	15%	\$619.02	1,351.16	1,423.36	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	3.65	9	\$0.65	15%	25%	\$22.41	3,965.86	4,251.91	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	129.08	8	\$56.85	15%	25%	\$60.74	2,107.88	2,259.92	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	161.41	7	\$3,486.31	15%	30%	\$3,301.98	3,953.54	4,238.70	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	0.00	12	\$50.74	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	3.89	4	\$24.51	0%	0%	\$1,490.95	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	11.54	15	\$347.21	0%	0%	\$2,637.93	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	0.00	2	\$10.74	0%	0%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.27	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	4.78	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	36.24	15	\$305.13	0%	0%	\$738.10	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	145.12	15	\$539.09	0%	0%	\$325.63	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	304.91	10	\$449.00	0%	0%	\$167.65	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	106.23	16	\$105.92	0%	0%	\$84.25	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	81.78	10	\$521.11	0%	0%	\$725.47	0.00	0.00	RFG_DDEF-Refrigeration-VITRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	0.00	8	\$18,135.52	0%	0%	\$0.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	61.77	12	\$605.15	0%	0%	\$985.58	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	0.00	5	\$49.37	0%	0%	\$0.00	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,757.06	5	\$288.64	25%	75%	\$32.26	90.48	93.65	VEND_CTRL-Miscellaneous-SCE-17R0-42
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,756.02	18	\$8,815.42	25%	50%	\$247.31	1,411.61	1,430.62	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	350.83	15	\$335.00	0%	0%	\$46.45	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	288.79	15	\$335.00	0%	0%	\$46.45	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	72.91	4	\$37.32	10%	50%	\$107.58	3,889.29	3,437.57	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.08	5	\$0.01	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$1.47	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.47	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$1.47	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$11.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	669.06	18	\$4,231.40	0%	0%	\$488.98	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.82	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	25.85	7	\$423.28	0%	0%	\$2,393.97	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$2,393.97	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$2,393.97	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	4,061.04	15	\$1,114.41	0%	0%	\$23.68	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$23.68	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,324.68	6	\$37.07	1%	3%	\$4.50	509.93	509.93	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.04	20	\$0.36	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	1.07	25	\$4.24	0%	0%	\$69.28	0.00	0.00	ADVNC-All-RSRCH-1

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Small Office	Heating	Advanced New Construction Designs	sqft	Existing	1.29	25	\$4.24	0%	0%	\$69.28	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.24	0%	0%	\$69.28	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$69.28	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.87	25	\$4.24	0%	0%	\$69.28	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.24	0%	0%	\$69.28	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.26	3	\$0.10	3%	14%	\$33.77	1,354.64	1,428.87	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	Existing	0.22	3	\$0.10	3%	14%	\$33.77	515.48	530.43	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.10	3%	14%	\$33.77	307.43	313.94	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.10	3%	14%	\$33.77	134.43	137.84	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.10	3%	14%	\$33.77	807.63	885.46	COM_SEM-Lighting-AEG-1
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.10	3%	14%	\$33.77	440.79	472.58	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.10	3%	14%	\$33.77	7.71	7.92	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.10	3	\$0.10	3%	14%	\$33.77	717.36	634.04	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	Existing	0.36	3	\$0.53	0%	0%	\$159.82	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	Existing	0.30	3	\$0.53	0%	0%	\$159.82	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.53	0%	0%	\$159.82	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.53	0%	0%	\$159.82	0.00	0.00	COM_CX-Water Heating-AEG-1

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Small Office	Interior Lighting	Commissioning	sqft	Existing	0.17	3	\$0.53	0%	0%	\$159.82	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.53	0%	0%	\$159.82	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.53	0%	0%	\$159.82	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.36	3	\$0.17	11%	59%	\$50.73	8,184.71	8,633.18	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.17	11%	59%	\$50.73	3,114.49	3,204.82	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.17	11%	59%	\$50.73	1,857.47	1,896.81	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.17	11%	59%	\$50.73	270.75	277.61	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.17	3	\$0.17	11%	59%	\$50.73	4,066.42	4,458.26	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.17	11%	59%	\$50.73	2,219.36	2,379.44	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.17	11%	59%	\$50.73	77.69	79.77	COM_RCX-Refrigeration-AEG-1
Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$87.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Office	Miscellaneous	LED Signage	perBldg	Existing	106.71	16	\$75.53	20%	75%	\$57.20	498.91	498.91	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,342.50	25	\$3,872.91	0%	75%	\$111.17	1,384.08	1,392.11	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$168.06	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.28	45	\$0.84	15%	50%	\$168.06	981.49	982.39	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$168.06	15.05	15.06	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.55	20	\$0.86	15%	50%	\$113.50	1,105.36	1,107.68	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$113.50	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$113.50	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.81	45%	50%	\$9,999.00	123.67	123.93	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.81	45%	50%	\$9,999.00	-56.53	-56.58	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-31.64	-31.64	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$2,363.28	-62.17	-62.30	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$1.70	15%	50%	\$2,363.28	74.50	74.57	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,363.28	41.70	41.70	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	25.70	18	\$0.59	15%	35%	\$0.78	324.82	325.52	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	25.85	18	\$0.59	15%	35%	\$0.78	143.77	143.91	Building Energy Simulation Tool

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Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	5.70	18	\$0.59	15%	35%	\$0.78	80.46	80.47	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.73	30	\$37.07	66%	66%	\$125.65	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	11.95	30	\$37.07	66%	66%	\$125.65	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.52	30	\$37.07	66%	66%	\$125.65	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	137.20	5	\$267.96	18%	75%	\$368.64	823.24	829.28	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.38	15	\$0.05	10%	15%	\$11.35	268.60	269.91	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.86	14	\$5.25	6%	75%	\$119.59	1,460.60	1,463.77	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.26	15%	20%	\$96.65	249.02	249.03	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	399.84	15	\$189.00	19%	25%	\$39.64	85.74	85.75	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	144.08	15	\$1,273.23	19%	25%	\$741.06	30.90	30.90	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.12	15	\$0.07	19%	25%	\$44.77	108.58	108.59	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	2%	56%	\$1,611.18	101.94	101.96	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.17	15	\$0.76	1%	19%	\$46.05	1,309.80	1,312.58	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.22	15	\$0.76	1%	19%	\$46.05	630.33	630.40	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,147.95	15	\$7,501.21	15%	15%	\$45.74	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,692.53	15	\$7,501.21	15%	15%	\$45.74	0.00	0.00	HVLS-Heating-AEG-1
Small Office	Cooling	RTU - Maintenance	tonCool	New	5.39	3	\$33.20	15%	45%	\$1,819.61	12.11	12.24	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	New	208.81	15	\$410.87	15%	45%	\$166.65	2,776.55	2,783.81	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	201.71	15	\$698.92	15%	75%	\$293.46	6,238.62	6,249.78	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	366.66	20	\$1,370.94	15%	75%	\$116.92	282.04	282.04	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	477.40	20	\$1,370.94	15%	75%	\$116.92	2,590.68	2,590.68	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.53	5	\$0.75	30%	40%	\$108.69	367.00	368.62	STAT_WIFI-AII-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.64	5	\$0.75	30%	40%	\$108.69	194.83	195.20	STAT_WIFI-AII-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	30%	40%	\$108.69	109.04	109.05	STAT_WIFI-AII-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	24.13	10	\$8.63	25%	65%	\$38.95	76.98	76.98	DHW_AER-Water Heating-ILTRM-v4.0-1

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Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	26.51	10	\$17.56	25%	65%	\$72.11	42.29	42.29	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	6.57	10	\$16.82	25%	65%	\$278.83	12.08	12.08	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	0%	0%	\$6.40	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	92.99	15	\$15.38	1%	75%	\$13.87	326.89	326.89	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	98.88	4	\$75.87	25%	40%	\$173.61	66.75	66.75	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	29.81	29.81	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Office	Water Heating	Water Heater - Solar System	DHW kWh	New	12.38	20	\$258.33	1%	30%	\$1,501.53	463.90	463.90	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.32	15	\$0.36	11%	23%	\$95.52	2,536.45	2,573.97	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.45	15	\$0.60	11%	23%	\$112.57	3,551.03	3,603.56	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	90.42	15	\$56.14	1%	3%	\$54.43	36.97	38.44	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.03	15	\$65.99	1%	3%	\$109.09	2.42	2.51	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,318.76	11	\$26.48	15%	30%	\$1.17	466.40	469.70	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	237.44	16	\$1,864.95	5%	15%	\$636.50	382.73	385.22	CLTG_BILVL-Interior Lighting-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	3.34	9	\$0.65	15%	25%	\$23.41	813.39	828.56	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	118.22	8	\$56.85	15%	25%	\$63.45	397.38	405.03	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	147.82	7	\$3,486.31	15%	30%	\$3,449.04	676.71	690.19	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	0.00	12	\$50.74	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	3.66	4	\$24.51	0%	0%	\$1,514.62	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	10.88	15	\$347.21	0%	0%	\$2,674.40	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	0.00	2	\$10.74	0%	0%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.26	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.51	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	34.19	15	\$305.13	0%	0%	\$748.30	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	136.91	15	\$539.09	0%	0%	\$330.13	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	287.65	10	\$449.00	0%	0%	\$169.96	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

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Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	100.02	16	\$105.92	0%	0%	\$85.59	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	76.99	10	\$521.11	0%	0%	\$736.99	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	0.00	8	\$647.70	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	58.28	12	\$5,648.09	0%	0%	\$9,325.94	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	0.00	5	\$49.37	0%	0%	\$0.00	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,640.50	5	\$288.64	25%	75%	\$32.88	11.98	11.98	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,378.36	18	\$8,815.42	25%	50%	\$281.21	591.71	591.75	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	254.22	15	\$335.00	0%	0%	\$49.14	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	317.33	15	\$335.00	0%	0%	\$49.14	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	70.41	4	\$37.32	10%	50%	\$111.81	403.24	359.32	SMARTSTRIP-Electronics-RTF-v3.2-1

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Small Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.08	5	\$0.01	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.29	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.29	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$1.29	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$5.37	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	577.37	18	\$4,231.40	0%	0%	\$556.02	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.74	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	24.70	7	\$423.28	0%	0%	\$2,433.86	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$2,433.86	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$2,433.86	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	3,881.59	15	\$1,114.41	0%	0%	\$24.07	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$24.07	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,324.68	6	\$37.07	1%	3%	\$4.50	141.00	141.00	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.04	20	\$0.32	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	New	1.06	25	\$4.24	10%	25%	\$67.11	2,696.68	2,701.03	ADVNC-AII-RSRCH-1
Small Office	Heating	Advanced New Construction Designs	sqft	New	1.28	25	\$4.24	10%	25%	\$67.11	1,431.58	1,432.59	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.28	25	\$4.24	10%	25%	\$67.11	801.22	801.26	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$67.11	391.73	391.73	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.88	25	\$4.24	10%	25%	\$67.11	9,328.03	9,474.56	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.46	25	\$4.24	10%	25%	\$67.11	3,806.39	3,831.86	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	New	0.16	3	\$0.07	3%	14%	\$27.45	77.94	78.59	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	New	0.20	3	\$0.07	3%	14%	\$27.45	41.38	41.53	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.07	3%	14%	\$27.45	23.16	23.16	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.07	3%	14%	\$27.45	11.32	11.32	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.07	3%	14%	\$27.45	67.40	70.90	COM_SEM-Lighting-AEG-1

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Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.07	3%	14%	\$27.45	36.67	37.58	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.07	3%	14%	\$27.45	0.65	0.65	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.09	3	\$0.07	3%	14%	\$27.45	57.45	51.05	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	New	0.23	3	\$0.35	11%	59%	\$126.62	2,779.72	2,788.01	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	New	0.27	3	\$0.35	11%	59%	\$126.62	1,475.66	1,477.59	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	New	0.06	3	\$0.35	11%	59%	\$126.62	825.89	825.95	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.35	11%	59%	\$126.62	134.60	134.60	COM_CX-Water Heating-AEG-1
Small Office	Interior Lighting	Commissioning	sqft	New	0.16	3	\$0.35	11%	59%	\$126.62	8,012.70	8,204.31	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$0.35	11%	59%	\$126.62	3,269.65	3,304.08	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.35	11%	59%	\$126.62	7.34	7.34	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	New	0.23	3	\$0.11	0%	0%	\$40.19	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	New	0.27	3	\$0.11	0%	0%	\$40.19	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.11	0%	0%	\$40.19	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.11	0%	0%	\$40.19	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.16	3	\$0.11	0%	0%	\$40.19	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.11	0%	0%	\$40.19	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.11	0%	0%	\$40.19	0.00	0.00	COM_RCX-Refrigeration-AEG-1

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Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.11	10	\$0.09	0%	0%	\$90.98	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Miscellaneous	LED Signage	perBldg	New	106.71	16	\$75.53	20%	75%	\$57.20	132.11	132.11	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,505.07	25	\$3,853.95	0%	75%	\$100.56	742.89	742.89	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$49.73	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.95	45	\$0.84	15%	35%	\$49.73	490.29	491.32	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$49.73	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.28	20	\$0.86	15%	35%	\$233.20	397.72	407.83	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$233.20	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$233.20	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	1.35	20	\$0.81	45%	50%	\$237.39	324.46	332.71	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.63	20	\$0.81	45%	50%	\$237.39	-81.72	-81.89	Building Energy Simulation Tool

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Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.44	20	\$0.81	45%	50%	\$237.39	-116.35	-117.93	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-1.84	45	\$1.70	15%	35%	\$26.24	-696.22	-713.92	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.21	45	\$1.70	15%	35%	\$26.24	653.72	655.09	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	2.24	45	\$1.70	15%	35%	\$26.24	930.83	943.46	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.82	18	\$0.59	15%	25%	\$3.25	39.32	40.32	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	4.24	18	\$0.59	15%	25%	\$3.25	13.15	13.18	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.95	18	\$0.59	15%	25%	\$3.25	18.72	18.98	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	10.91	30	\$37.07	48%	48%	\$65.37	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.43	30	\$37.07	48%	48%	\$65.37	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	6.99	30	\$37.07	48%	48%	\$65.37	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,033.59	10	\$914.46	15%	75%	\$25.88	15.50	16.39	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	410.14	15	\$248.07	15%	75%	\$53.17	219.24	231.83	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	957.63	15	\$263.92	15%	75%	\$24.23	51.19	54.13	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	28.13	15	\$248.07	15%	75%	\$794.99	5.46	5.99	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	30,385.47	10	\$1,796.53	15%	75%	\$6.92	42.44	46.50	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	144.33	5	\$267.96	18%	75%	\$355.91	3,375.23	3,479.96	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.55	15	\$0.05	5%	15%	\$7.97	857.70	891.93	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.39	14	\$5.25	3%	75%	\$330.60	1,936.77	1,943.20	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.59	18	\$0.26	15%	20%	\$33.72	466.63	472.96	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	4,587.61	15	\$189.00	13%	25%	\$3.52	568.64	580.77	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	1,653.16	15	\$1,273.23	13%	50%	\$65.80	644.08	657.82	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.36	15	\$0.02	13%	50%	\$3.98	2,263.49	2,311.78	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	15%	43%	\$562.19	168.04	171.62	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.94	15	\$0.76	5%	14%	\$29.06	739.08	741.53	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.28	15	\$0.76	5%	14%	\$29.06	2,055.84	2,099.69	HVAC_DOAS-Heating-7PLN-v5-1
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,047.98	15	\$7,501.21	15%	30%	\$107.56	1,215.08	1,263.56	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.18	15	\$7,501.21	15%	30%	\$107.56	0.02	0.02	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	140.06	144.69	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	220.28	15	\$410.87	15%	45%	\$160.37	3,293.99	3,355.66	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	212.79	15	\$698.92	15%	75%	\$282.41	6,161.97	6,249.04	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	332.96	20	\$979.24	15%	25%	\$131.03	66.77	73.41	DHP-Cooling/Heating-7PLN-v2-1

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Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	237.85	20	\$979.24	15%	25%	\$131.03	644.83	644.83	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	30%	40%	\$81.40	1,105.96	1,134.08	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$81.40	454.52	455.47	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.41	5	\$0.75	30%	40%	\$81.40	647.19	655.96	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	284.68	10	\$8.63	25%	65%	\$3.40	142.82	146.93	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	312.81	10	\$17.56	25%	65%	\$6.29	78.47	80.73	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	77.51	10	\$16.82	25%	65%	\$24.32	19.20	19.69	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	0%	0%	\$6.29	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,095.47	15	\$15.38	16%	75%	\$1.21	334.71	343.17	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,166.77	4	\$75.87	25%	40%	\$15.14	216.79	222.26	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	181.92	186.52	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.57	579.31	593.95	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.68	15	\$0.36	3%	23%	\$46.97	2,895.25	3,001.34	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.95	15	\$0.60	3%	23%	\$55.36	4,053.35	4,201.88	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	571.87	15	\$56.14	1%	3%	\$9.14	83.88	93.24	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.64	15	\$65.99	1%	3%	\$116.67	3.10	3.45	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,879.36	11	\$26.48	15%	30%	\$0.58	1,183.30	1,253.83	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	499.64	16	\$1,864.95	5%	15%	\$318.39	807.79	855.94	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.46	9	\$0.65	15%	25%	\$35.30	718.56	806.36	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	87.10	8	\$56.85	15%	25%	\$95.39	381.92	428.59	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	108.91	7	\$3,486.31	15%	30%	\$5,185.49	716.32	803.86	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	97.48	12	\$50.74	4%	25%	\$52.36	56.31	57.97	RFG_ASH-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	21.58	4	\$24.51	4%	25%	\$275.78	6.44	6.81	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	158.87	15	\$347.21	0%	0%	\$192.46	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	129.08	2	\$10.74	4%	25%	\$54.44	1.29	2.17	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	3.75	15	\$508.61	2%	13%	\$9,999.00	224.61	231.95	RFG_HECOMP-Refrigeration-AEO15-4
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	65.79	15	\$5,552.98	2%	13%	\$7,432.25	328.52	339.26	RFG_HECOMP-Refrigeration-AEO15-4

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Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	498.97	15	\$305.13	4%	25%	\$53.85	199.32	205.83	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,998.24	15	\$539.09	2%	13%	\$23.76	299.33	309.11	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,198.34	10	\$449.00	0%	0%	\$12.23	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	219.03	16	\$153.90	4%	25%	\$59.77	38.03	39.41	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	78.77	15	\$135.00	2%	13%	\$151.25	1.71	1.77	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	763.41	16	\$105.92	4%	25%	\$13.36	10.51	12.44	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	587.68	10	\$521.11	4%	25%	\$115.02	8.09	9.58	RFG_DDEF-Refrigeration-VTTRM-1
Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	413.98	8	\$18,135.52	4%	25%	\$8,662.47	0.15	0.25	RFG_ADC-Refrigeration-PGE-R6-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	850.58	12	\$605.15	4%	25%	\$71.91	254.83	263.16	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	43.51	8	\$15.90	0%	0%	\$49.08	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.48	8	\$3.87	0%	0%	\$115.89	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	15.77	5	\$49.37	0%	0%	\$613.22	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,387.66	5	\$288.64	25%	75%	\$40.85	231.10	239.16	VEND_CTRL-Miscellaneous-SCE-17R0-46
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	6,944.28	18	\$8,815.42	25%	50%	\$98.12	1,108.81	1,123.84	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	323.20	15	\$335.00	0%	0%	\$54.52	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	223.99	15	\$335.00	0%	0%	\$54.52	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	16.08	4	\$37.32	10%	50%	\$494.72	258.05	232.59	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$72.07	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	16,858.02	18	\$4,231.40	0%	0%	\$19.40	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$3,451.96	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	291.50	7	\$423.28	0%	0%	\$205.58	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	4.78	7	\$423.28	0%	0%	\$205.58	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	4.78	7	\$423.28	0%	0%	\$205.58	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	45,800.50	15	\$1,114.41	0%	0%	\$2.09	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	250.94	15	\$1,114.41	0%	0%	\$2.09	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	8,697.09	6	\$37.07	1%	3%	\$0.68	104.64	104.64	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.03	20	\$0.26	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.14	25	\$4.24	0%	0%	\$60.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.94	25	\$4.24	0%	0%	\$60.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.24	0%	0%	\$60.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.24	0%	0%	\$60.30	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.53	25	\$4.24	0%	0%	\$60.30	0.00	0.00	ADVNC-AII-RSRCH-1

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Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$60.30	0.00	0.00	ADVNC-All-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.24	3	\$0.11	0%	3%	\$36.59	111.50	115.95	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.11	0%	3%	\$36.59	45.82	45.98	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.11	0%	3%	\$36.59	65.25	66.64	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.11	0%	3%	\$36.59	12.98	13.31	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.26	3	\$0.11	0%	3%	\$36.59	117.01	128.40	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.11	0%	3%	\$36.59	21.78	24.44	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.11	0%	3%	\$36.59	13.30	13.73	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.11	0%	3%	\$36.59	12.98	11.70	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	Existing	0.33	3	\$0.67	0%	0%	\$171.15	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	Existing	0.25	3	\$0.67	0%	0%	\$171.15	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Ventilation	Commissioning	sqft	Existing	0.18	3	\$0.67	0%	0%	\$171.15	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.67	0%	0%	\$171.15	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.30	3	\$0.67	0%	0%	\$171.15	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.67	0%	0%	\$171.15	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$0.67	0%	0%	\$171.15	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.33	3	\$0.21	10%	65%	\$54.32	2,830.42	2,943.36	COM_RCX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.21	10%	65%	\$54.32	1,163.22	1,167.08	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.21	10%	65%	\$54.32	1,656.31	1,691.64	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.21	10%	65%	\$54.32	109.86	112.63	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.30	3	\$0.21	10%	65%	\$54.32	2,475.19	2,716.06	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.21	10%	65%	\$54.32	460.76	517.06	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.21	10%	65%	\$54.32	562.61	581.00	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.21	10	\$0.09	0%	0%	\$50.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.19	10	\$1.12	0%	0%	\$672.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.24	0%	0%	\$1,475.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.09	10	\$3.24	0%	0%	\$3,988.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$4,328.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	Existing	139.26	16	\$75.53	20%	75%	\$43.83	20.11	20.11	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	13,060.91	25	\$21,593.86	0%	0%	\$111.17	0.00	0.00	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$62.17	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	0.76	45	\$0.84	15%	50%	\$62.17	308.68	308.69	Building Energy Simulation Tool

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Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$62.17	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.31	20	\$0.86	15%	25%	\$203.67	104.29	104.49	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$203.67	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$203.67	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.24	20	\$0.81	45%	50%	\$9,999.00	26.80	26.85	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.21	20	\$0.81	45%	50%	\$9,999.00	-12.17	-12.17	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.15	20	\$0.81	45%	50%	\$9,999.00	-18.89	-18.89	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.11	45	\$1.70	15%	50%	\$28.74	-23.87	-23.92	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	1.96	45	\$1.70	15%	50%	\$28.74	224.03	224.04	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	1.45	45	\$1.70	15%	50%	\$28.74	347.88	347.86	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	11.74	18	\$0.59	15%	25%	\$1.64	30.79	30.86	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	8.98	18	\$0.59	15%	25%	\$1.64	12.18	12.18	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.63	18	\$0.59	15%	25%	\$1.64	18.92	18.92	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.91	30	\$37.07	66%	66%	\$82.22	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	13.90	30	\$37.07	66%	66%	\$82.22	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	5.92	30	\$37.07	66%	66%	\$82.22	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,008.35	10	\$914.46	15%	75%	\$33.10	2.60	2.60	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	305.90	15	\$248.07	15%	75%	\$67.99	45.76	45.76	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	714.23	15	\$263.92	15%	75%	\$30.98	10.68	10.68	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	19.10	15	\$248.07	15%	75%	\$1,088.73	1.09	1.09	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	20,440.14	10	\$1,796.53	15%	75%	\$9.57	6.74	6.74	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	103.97	5	\$267.96	18%	75%	\$486.35	307.16	309.35	AEG-BEST
Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.40	15	\$0.05	10%	15%	\$10.74	83.86	84.25	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.11	14	\$5.25	6%	75%	\$413.29	373.25	373.29	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.50	18	\$0.26	15%	20%	\$39.08	177.60	177.59	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	2,859.92	15	\$189.00	19%	25%	\$5.54	60.91	60.90	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	1,030.58	15	\$1,273.23	19%	50%	\$103.54	120.99	120.96	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.02	19%	50%	\$6.26	425.18	425.11	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	15%	43%	\$651.47	37.89	37.89	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.86	15	\$0.76	5%	14%	\$45.14	175.15	175.17	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.55	15	\$0.76	5%	14%	\$45.14	236.24	236.19	HVAC_DOAS-Heating-7PLN-v5-1

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Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,384.46	15	\$7,501.21	15%	30%	\$144.80	237.60	238.71	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.15	15	\$7,501.21	15%	30%	\$144.80	0.00	0.00	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	New	6.22	3	\$33.20	15%	45%	\$1,576.56	6.71	6.78	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	New	158.59	15	\$410.87	15%	45%	\$219.42	1,017.74	1,020.38	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	153.19	15	\$698.92	15%	75%	\$386.40	2,289.94	2,293.99	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	241.28	20	\$979.24	15%	25%	\$162.59	18.49	18.49	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	192.27	20	\$979.24	15%	25%	\$162.59	167.75	167.75	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.56	5	\$0.75	30%	40%	\$103.04	115.26	115.74	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.47	5	\$0.75	30%	40%	\$103.04	50.09	50.09	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$103.04	77.78	77.77	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	90.70	10	\$8.63	25%	65%	\$10.36	25.32	25.32	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	99.66	10	\$17.56	25%	65%	\$19.18	13.91	13.91	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	24.70	10	\$16.82	25%	65%	\$74.17	3.98	3.98	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	0%	0%	\$6.40	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,047.06	15	\$15.38	1%	75%	\$1.23	107.47	107.47	AEG-BEST

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Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	371.74	4	\$75.87	25%	40%	\$46.18	21.96	21.96	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	9.81	9.81	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.19	152.72	152.72	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.63	15	\$0.36	11%	23%	\$48.70	1,446.77	1,462.47	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.88	15	\$0.60	11%	23%	\$57.39	2,025.47	2,047.45	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	528.39	15	\$56.14	1%	3%	\$9.46	18.36	19.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.20	15	\$65.99	1%	3%	\$110.49	0.68	0.70	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,517.49	11	\$26.48	15%	30%	\$0.60	259.02	262.56	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	462.58	16	\$1,864.95	5%	15%	\$327.55	212.64	215.33	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.23	9	\$0.65	15%	25%	\$37.15	136.70	143.65	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	79.01	8	\$56.85	15%	25%	\$100.40	66.80	70.31	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	98.79	7	\$3,486.31	15%	30%	\$5,458.23	113.72	119.93	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	91.77	12	\$50.74	4%	25%	\$53.20	13.02	13.02	RFG_ASH-Refrigeration-7PLN-v6-1

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Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	20.16	4	\$24.51	4%	25%	\$282.10	0.65	0.67	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	149.26	15	\$347.21	0%	0%	\$195.63	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	109.40	2	\$10.74	4%	25%	\$63.06	0.07	0.11	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	3.52	15	\$508.61	2%	13%	\$9,999.00	57.90	57.99	RFG_HECOMP-Refrigeration-AEO17-3
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	61.81	15	\$5,552.98	2%	13%	\$7,554.59	84.69	84.81	RFG_HECOMP-Refrigeration-AEO17-5
Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	468.79	15	\$305.13	4%	25%	\$54.74	51.38	51.46	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,877.37	15	\$539.09	2%	13%	\$24.15	77.16	77.27	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	3,944.39	10	\$449.00	0%	0%	\$12.43	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	205.27	16	\$153.90	4%	25%	\$60.86	10.04	10.06	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	73.82	15	\$135.00	2%	13%	\$154.01	0.44	0.44	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	691.51	16	\$105.92	4%	25%	\$14.08	2.76	2.95	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	532.33	10	\$521.11	4%	25%	\$121.21	1.67	1.81	RFG_DDEF-Refrigeration-VTTRM-1

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Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	12.53	8	\$647.70	4%	25%	\$9,999.00	0.03	0.04	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	799.13	12	\$5,648.09	4%	25%	\$682.18	58.93	59.03	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	40.83	8	\$15.90	0%	0%	\$49.92	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.21	8	\$3.87	0%	0%	\$117.87	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	14.79	5	\$49.37	0%	0%	\$623.79	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,295.61	5	\$288.64	25%	75%	\$41.63	28.43	28.43	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	5,878.46	18	\$8,815.42	25%	50%	\$113.70	422.02	421.99	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	234.20	15	\$335.00	0%	0%	\$67.59	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	181.34	15	\$335.00	0%	0%	\$67.59	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	15.58	4	\$37.32	10%	50%	\$509.85	25.18	22.75	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.05	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$39.42	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	14,270.63	18	\$4,231.40	0%	0%	\$22.48	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$3,288.37	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	278.62	7	\$423.28	0%	0%	\$208.95	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	4.57	7	\$423.28	0%	0%	\$208.95	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	4.57	7	\$423.28	0%	0%	\$208.95	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	43,776.74	15	\$1,114.41	0%	0%	\$2.12	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	232.22	15	\$1,114.41	0%	0%	\$2.12	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,899.03	6	\$37.07	1%	3%	\$2.05	26.77	26.77	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.03	20	\$0.24	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	1.12	25	\$4.24	10%	30%	\$58.58	1,138.48	1,140.22	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	New	0.94	25	\$4.24	10%	30%	\$58.58	494.77	494.79	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.70	25	\$4.24	10%	30%	\$58.58	768.31	768.26	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$58.58	174.43	174.43	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.54	25	\$4.24	10%	30%	\$58.58	6,266.38	6,345.35	ADVNC-AII-RSRCH-1
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	30%	\$58.58	865.62	880.82	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.17	3	\$0.08	0%	3%	\$29.82	6.63	6.68	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.08	0%	3%	\$29.82	2.88	2.88	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.08	0%	3%	\$29.82	4.48	4.47	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.08	0%	3%	\$29.82	1.02	1.02	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.24	3	\$0.08	0%	3%	\$29.82	9.13	9.60	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.08	0%	3%	\$29.82	1.68	1.80	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.08	0%	3%	\$29.82	1.04	1.05	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.08	0%	3%	\$29.82	0.98	0.88	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	New	0.24	3	\$0.46	10%	65%	\$136.70	1,004.81	1,007.66	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	New	0.20	3	\$0.46	10%	65%	\$136.70	436.68	436.71	COM_CX-HVAC-AEG-1

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Large Retail	Ventilation	Commissioning	sqft	New	0.15	3	\$0.46	10%	65%	\$136.70	678.10	678.02	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.46	10%	65%	\$136.70	51.32	51.32	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	New	0.28	3	\$0.46	10%	65%	\$136.70	4,608.87	4,703.69	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.46	10%	65%	\$136.70	636.66	654.61	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.46	10%	65%	\$136.70	748.30	748.91	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	New	0.24	3	\$0.14	0%	0%	\$43.39	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.14	0%	0%	\$43.39	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.14	0%	0%	\$43.39	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.14	0%	0%	\$43.39	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.28	3	\$0.14	0%	0%	\$43.39	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.14	0%	0%	\$43.39	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.14	0%	0%	\$43.39	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.19	10	\$0.09	0%	0%	\$52.73	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.18	10	\$1.12	0%	0%	\$683.75	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.05	3	\$0.24	0%	0%	\$1,499.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.09	10	\$3.24	0%	0%	\$4,054.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$4,399.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	New	139.26	16	\$75.53	20%	75%	\$43.83	4.95	4.95	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	13,900.63	25	\$21,385.58	0%	0%	\$100.56	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.26	45	\$0.84	15%	35%	\$72.01	1,562.07	1,616.37	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$0.84	15%	35%	\$72.01	795.42	820.53	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$72.01	339.21	343.11	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.55	20	\$0.86	15%	50%	\$118.90	1,436.27	1,486.19	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$118.90	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$118.90	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.59	20	\$0.81	45%	50%	\$212.97	888.02	918.89	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$212.97	-132.57	-136.75	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$212.97	-99.69	-100.84	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.03	45	\$1.70	15%	35%	\$221.07	-218.29	-225.88	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.38	45	\$1.70	15%	35%	\$221.07	1,060.56	1,094.03	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.09	45	\$1.70	15%	35%	\$221.07	797.51	806.70	Building Energy Simulation Tool

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Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	7.39	18	\$0.59	15%	50%	\$28.70	310.08	320.85	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.62	18	\$0.59	15%	50%	\$28.70	-69.55	-71.74	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.09	18	\$0.59	15%	50%	\$28.70	-52.30	-52.90	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.59	30	\$37.07	48%	48%	\$307.26	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	4.51	30	\$37.07	48%	48%	\$307.26	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.61	30	\$37.07	48%	48%	\$307.26	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	157.86	5	\$267.96	18%	75%	\$325.26	6,577.12	6,777.84	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.59	15	\$0.05	5%	15%	\$7.51	1,915.30	2,019.45	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.63	14	\$5.25	3%	75%	\$293.43	3,142.11	3,296.34	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.23	18	\$0.26	15%	20%	\$84.60	399.79	404.40	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	807.95	15	\$189.00	13%	25%	\$19.93	487.19	496.02	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	291.15	15	\$1,273.23	13%	25%	\$372.59	175.56	178.74	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.14	15	\$0.04	13%	25%	\$22.51	616.97	628.16	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	1%	33%	\$1,410.30	161.99	164.93	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.10	15	\$0.76	0%	11%	\$40.93	1,349.14	1,415.37	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.51	15	\$0.76	0%	11%	\$40.93	1,981.87	2,017.80	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,492.61	15	\$7,501.21	15%	15%	\$38.70	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,470.00	15	\$7,501.21	15%	15%	\$38.70	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	255.10	263.53	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	240.25	15	\$410.87	15%	45%	\$147.04	6,543.45	6,665.94	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	232.08	15	\$698.92	15%	75%	\$258.93	12,240.63	12,413.57	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	319.70	20	\$979.24	15%	75%	\$110.14	564.62	620.79	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	351.83	20	\$979.24	15%	75%	\$110.14	2,998.92	2,998.92	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.82	5	\$0.75	30%	40%	\$87.55	2,469.67	2,555.52	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.69	5	\$0.75	30%	40%	\$87.55	737.38	760.65	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.16	5	\$0.75	30%	40%	\$87.55	554.49	560.88	STAT_WIFI-AII-7PLN-v2-1

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Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	37.86	10	\$8.63	25%	65%	\$25.54	275.07	282.99	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	41.61	10	\$17.56	25%	65%	\$47.29	151.12	155.48	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	10.31	10	\$16.82	25%	65%	\$182.84	36.98	37.92	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	0%	0%	\$6.29	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	145.62	15	\$15.38	16%	75%	\$9.11	644.29	660.57	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	155.18	4	\$75.87	25%	40%	\$113.85	417.53	428.08	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	350.38	359.23	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.46	1,115.83	1,144.02	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.45	15	\$0.36	3%	23%	\$71.17	4,099.26	4,249.47	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.63	15	\$0.60	3%	23%	\$83.88	5,738.97	5,949.26	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	169.85	15	\$56.14	1%	3%	\$30.76	118.77	132.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.64	15	\$65.99	1%	3%	\$116.67	6.36	7.07	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,220.38	11	\$26.48	15%	30%	\$0.88	1,675.38	1,775.25	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	329.76	16	\$1,864.95	5%	15%	\$482.40	1,143.71	1,211.88	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.46	9	\$0.65	15%	25%	\$35.30	1,541.47	1,729.84	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	87.10	8	\$56.85	15%	25%	\$95.39	819.30	919.42	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	108.91	7	\$3,486.31	15%	30%	\$5,185.49	1,536.68	1,724.47	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	8.93	12	\$50.74	4%	25%	\$571.39	4.84	4.98	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	1.84	4	\$24.51	4%	25%	\$3,151.10	0.90	0.92	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	12.53	15	\$347.21	0%	0%	\$2,431.84	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	0.00	2	\$10.74	4%	25%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.30	15	\$508.61	2%	13%	\$9,999.00	23.55	24.23	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.19	15	\$5,552.98	2%	13%	\$9,999.00	34.44	35.44	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	39.35	15	\$305.13	4%	25%	\$680.43	20.90	21.50	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	157.60	15	\$539.09	2%	13%	\$300.19	31.38	32.29	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	331.12	10	\$449.00	0%	0%	\$154.55	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	20.02	16	\$153.90	4%	25%	\$650.71	3.24	3.35	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	7.20	15	\$135.00	2%	13%	\$1,646.70	0.15	0.15	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	49.61	16	\$105.92	4%	25%	\$180.40	4.03	4.15	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	38.19	10	\$521.11	4%	25%	\$1,553.45	3.10	3.19	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	0.00	8	\$18,135.52	4%	25%	\$0.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	67.08	12	\$605.15	4%	25%	\$908.58	26.72	27.49	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	3.99	8	\$15.90	0%	0%	\$535.54	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.41	8	\$3.87	0%	0%	\$1,264.57	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	1.44	5	\$49.37	0%	0%	\$6,691.29	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,463.00	5	\$288.64	25%	75%	\$38.75	31.08	32.16	VEND_CTRL-Miscellaneous-SCE-17R0-47
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,760.53	18	\$8,815.42	25%	50%	\$246.15	949.99	960.94	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	310.33	15	\$335.00	0%	0%	\$46.47	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	325.32	15	\$335.00	0%	0%	\$46.47	0.00	0.00	AEG - BEST

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Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	10.09	4	\$37.32	10%	50%	\$747.71	382.64	321.42	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$1.81	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.81	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.81	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$32.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,005.22	18	\$4,231.40	0%	0%	\$324.47	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$3,886.40	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	38.77	7	\$423.28	0%	0%	\$1,595.98	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$1,595.98	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$1,595.98	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	6,091.56	15	\$1,114.41	0%	0%	\$15.78	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$15.78	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,018.00	6	\$37.07	1%	3%	\$5.85	175.16	175.16	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.18	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.22	25	\$4.24	0%	0%	\$74.07	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.95	25	\$4.24	0%	0%	\$74.07	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.28	25	\$4.24	0%	0%	\$74.07	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$74.07	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.01	25	\$4.24	0%	0%	\$74.07	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$74.07	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.26	3	\$0.08	0%	3%	\$31.15	248.99	262.53	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.08	0%	3%	\$31.15	74.34	77.99	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.08	0%	3%	\$31.15	55.90	56.92	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.08	0%	3%	\$31.15	25.00	25.64	COM_SEM-Water Heating-AEG-1

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Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.17	3	\$0.08	0%	3%	\$31.15	165.67	181.79	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.08	0%	3%	\$31.15	46.73	52.44	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.08	0%	3%	\$31.15	1.39	1.43	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.08	0%	3%	\$31.15	19.25	16.17	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	Existing	0.36	3	\$0.52	0%	0%	\$160.82	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	Existing	0.30	3	\$0.52	0%	0%	\$160.82	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.52	0%	0%	\$160.82	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.52	0%	0%	\$160.82	0.00	0.00	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.20	3	\$0.52	0%	0%	\$160.82	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.52	0%	0%	\$160.82	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.52	0%	0%	\$160.82	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.36	3	\$0.16	10%	65%	\$51.04	6,320.49	6,664.17	COM_RCX-HVAC-AEG-1
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.16	10%	65%	\$51.04	1,887.14	1,979.77	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.16	10%	65%	\$51.04	1,419.07	1,444.80	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.16	10%	65%	\$51.04	211.58	216.92	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.20	3	\$0.16	10%	65%	\$51.04	3,504.51	3,845.55	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.16	10%	65%	\$51.04	988.43	1,109.22	COM_RCX-Lighting-AEG-1

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Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.16	10%	65%	\$51.04	58.99	60.69	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.14	10	\$0.09	0%	0%	\$77.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	Existing	139.26	16	\$75.53	20%	75%	\$43.83	287.54	287.54	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,800.18	25	\$2,976.28	0%	0%	\$111.17	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$183.17	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.25	45	\$0.84	15%	50%	\$183.17	455.41	455.97	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$183.17	26.44	26.44	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.69	20	\$0.86	15%	50%	\$76.94	865.27	867.07	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.10	20	\$0.86	15%	50%	\$76.94	43.78	43.84	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.03	20	\$0.86	15%	50%	\$76.94	40.44	40.43	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.81	45%	50%	\$959.36	108.84	109.06	Building Energy Simulation Tool

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Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.81	45%	50%	\$959.36	-17.82	-17.84	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$959.36	-16.45	-16.45	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$775.13	-4.60	-4.61	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.10	45	\$1.70	15%	50%	\$775.13	129.22	129.38	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$1.70	15%	50%	\$775.13	119.34	119.33	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	5.72	18	\$0.59	15%	50%	\$2.22	111.47	111.71	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	11.14	18	\$0.59	15%	50%	\$2.22	77.66	77.76	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.35	18	\$0.59	15%	50%	\$2.22	71.73	71.72	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.22	30	\$37.07	66%	66%	\$243.11	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	5.29	30	\$37.07	66%	66%	\$243.11	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.92	30	\$37.07	66%	66%	\$243.11	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Small Retail	Cooling	HVAC - Economizer	HP cool	New	113.56	5	\$267.96	18%	75%	\$445.38	597.09	601.44	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.43	15	\$0.05	10%	15%	\$9.98	191.38	192.32	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.12	14	\$5.25	6%	75%	\$413.62	550.68	552.30	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.26	15%	20%	\$95.54	155.84	155.83	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	186.13	15	\$189.00	19%	25%	\$85.11	53.45	53.44	VENT_PMSM-Ventilation-AEG-2016-2
Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	67.07	15	\$1,273.23	19%	25%	\$1,591.03	19.26	19.26	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.12	15	\$0.14	19%	25%	\$96.12	67.68	67.67	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	1%	33%	\$1,592.68	37.41	37.41	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.87	15	\$0.76	0%	11%	\$58.75	290.76	291.60	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.23	15	\$0.76	0%	11%	\$58.75	233.24	233.20	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,718.42	15	\$7,501.21	15%	15%	\$53.31	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,174.43	15	\$7,501.21	15%	15%	\$53.31	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	New	6.21	3	\$33.20	15%	45%	\$1,577.79	12.20	12.34	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	New	172.83	15	\$410.87	15%	45%	\$201.34	2,020.15	2,025.39	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	166.95	15	\$698.92	15%	75%	\$354.56	4,545.36	4,553.41	RTU_PREC-Cooling-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	227.96	20	\$979.24	15%	75%	\$139.61	153.88	153.88	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	276.97	20	\$979.24	15%	75%	\$139.61	759.74	759.74	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.60	5	\$0.75	30%	40%	\$117.02	263.04	264.19	STAT_WIFI-All-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.47	5	\$0.75	30%	40%	\$117.02	73.90	74.09	STAT_WIFI-All-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	30%	40%	\$117.02	68.25	68.24	STAT_WIFI-All-7PLN-v2-1
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	36.19	10	\$8.63	25%	65%	\$25.97	48.76	48.76	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	39.77	10	\$17.56	25%	65%	\$48.07	26.79	26.79	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	9.85	10	\$16.82	25%	65%	\$185.89	7.66	7.66	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	0%	0%	\$6.40	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	139.18	15	\$15.38	1%	75%	\$9.27	206.88	206.88	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	148.33	4	\$75.87	25%	40%	\$115.74	42.29	42.29	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	18.88	18.88	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.08	294.15	294.15	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.41	15	\$0.36	11%	23%	\$73.78	2,048.41	2,070.64	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.58	15	\$0.60	11%	23%	\$86.96	2,867.78	2,898.90	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	156.93	15	\$56.14	1%	3%	\$31.86	25.99	26.96	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.20	15	\$65.99	1%	3%	\$110.49	1.39	1.44	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,981.54	11	\$26.48	15%	30%	\$0.91	366.73	371.75	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	305.31	16	\$1,864.95	5%	15%	\$496.29	301.07	304.87	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.23	9	\$0.65	15%	25%	\$37.15	293.24	308.16	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	79.01	8	\$56.85	15%	25%	\$100.40	143.29	150.84	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	98.79	7	\$3,486.31	15%	30%	\$5,458.23	243.96	257.28	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	8.41	12	\$50.74	4%	25%	\$580.46	1.12	1.12	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	1.73	4	\$24.51	4%	25%	\$3,201.13	0.09	0.09	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.79	15	\$347.21	0%	0%	\$2,468.92	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	0.00	2	\$10.74	4%	25%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.28	15	\$508.61	2%	13%	\$9,999.00	6.07	6.07	RFG_HECOMP-Refrigeration-AEO17-3
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.88	15	\$5,552.98	2%	13%	\$9,999.00	8.88	8.88	RFG_HECOMP-Refrigeration-AEO17-5

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Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	37.03	15	\$305.13	4%	25%	\$690.81	5.39	5.39	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	148.30	15	\$539.09	2%	13%	\$304.77	8.09	8.09	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	311.59	10	\$449.00	0%	0%	\$156.91	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	18.79	16	\$153.90	4%	25%	\$661.80	0.86	0.86	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	6.76	15	\$135.00	2%	13%	\$1,674.77	0.04	0.04	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	46.71	16	\$105.92	4%	25%	\$183.26	1.06	1.06	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	35.96	10	\$521.11	4%	25%	\$1,578.11	0.64	0.64	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	0.00	8	\$647.70	4%	25%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	63.13	12	\$5,648.09	4%	25%	\$8,609.41	6.18	6.18	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	3.74	8	\$15.90	0%	0%	\$544.67	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.39	8	\$3.87	0%	0%	\$1,286.12	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1.36	5	\$49.37	0%	0%	\$6,806.67	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,365.95	5	\$288.64	25%	75%	\$39.48	3.82	3.82	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,404.61	18	\$8,815.42	25%	50%	\$277.98	370.31	370.28	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	221.28	15	\$335.00	0%	0%	\$58.72	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	257.04	15	\$335.00	0%	0%	\$58.72	0.00	0.00	AEG - BEST
Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	9.67	4	\$37.32	10%	50%	\$795.27	35.60	30.58	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.66	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.66	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.66	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$17.68	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	875.62	18	\$4,231.40	0%	0%	\$366.42	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$3,685.88	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	37.06	7	\$423.28	0%	0%	\$1,622.57	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$1,622.57	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$1,622.57	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	5,822.39	15	\$1,114.41	0%	0%	\$16.05	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$16.05	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,018.00	6	\$37.07	1%	3%	\$5.85	44.82	44.82	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.16	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	1.21	25	\$4.24	10%	25%	\$71.44	1,948.69	1,951.80	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	New	0.95	25	\$4.24	10%	25%	\$71.44	547.46	547.98	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.28	25	\$4.24	10%	25%	\$71.44	505.62	505.59	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$71.44	251.97	251.97	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.02	25	\$4.24	10%	25%	\$71.44	6,654.22	6,738.08	ADVNC-AII-RSRCH-1

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Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$71.44	1,392.73	1,417.18	ADVNC-All-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.19	3	\$0.05	0%	3%	\$23.91	15.13	15.26	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.05	0%	3%	\$23.91	4.25	4.27	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.05	0%	3%	\$23.91	3.93	3.93	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.05	0%	3%	\$23.91	1.96	1.96	COM_SEM-Water Heating-AEG-1
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.16	3	\$0.05	0%	3%	\$23.91	12.92	13.59	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.05	0%	3%	\$23.91	3.61	3.86	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.05	0%	3%	\$23.91	0.11	0.11	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.05	0%	3%	\$23.91	1.38	1.18	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	New	0.26	3	\$0.31	10%	65%	\$121.27	2,293.19	2,299.97	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	New	0.20	3	\$0.31	10%	65%	\$121.27	644.25	645.39	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	New	0.06	3	\$0.31	10%	65%	\$121.27	595.01	594.95	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.31	10%	65%	\$121.27	98.84	98.84	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	New	0.18	3	\$0.31	10%	65%	\$121.27	6,525.50	6,659.75	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.31	10%	65%	\$121.27	1,365.79	1,404.30	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.31	10%	65%	\$121.27	7.25	7.25	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	New	0.26	3	\$0.10	0%	0%	\$38.49	0.00	0.00	COM_RCX-HVAC-AEG-1

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Small Retail	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.10	0%	0%	\$38.49	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.10	0%	0%	\$38.49	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.10	0%	0%	\$38.49	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.18	3	\$0.10	0%	0%	\$38.49	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.10	0%	0%	\$38.49	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.10	0%	0%	\$38.49	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.13	10	\$0.09	0%	0%	\$79.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	New	139.26	16	\$75.53	20%	75%	\$43.83	70.83	70.83	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,925.11	25	\$2,961.71	0%	0%	\$100.56	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$0.84	15%	35%	\$136.51	47.35	48.67	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.32	45	\$0.84	15%	35%	\$136.51	70.13	71.69	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$136.51	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.86	15%	35%	\$1,679.34	11.23	11.55	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$1,679.34	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$1,679.34	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.28	20	\$0.81	45%	50%	\$9,999.00	80.97	83.23	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.19	20	\$0.81	45%	50%	\$9,999.00	-10.43	-10.66	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.09	20	\$0.81	45%	50%	\$9,999.00	-32.57	-32.76	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.05	45	\$1.70	15%	35%	\$2,485.21	-335.87	-345.24	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.06	45	\$1.70	15%	35%	\$2,485.21	76.53	78.25	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.03	45	\$1.70	15%	35%	\$2,485.21	239.02	240.42	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.92	18	\$0.59	15%	50%	\$9,999.00	-45.72	-46.99	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.23	18	\$0.59	15%	50%	\$9,999.00	-13.84	-14.15	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.14	18	\$0.59	15%	50%	\$9,999.00	-43.22	-43.47	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	0.78	30	\$37.07	48%	48%	\$1,194.69	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	0.92	30	\$37.07	48%	48%	\$1,194.69	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.27	30	\$37.07	48%	48%	\$1,194.69	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	135.65	5	\$267.96	18%	75%	\$378.53	1,746.51	1,799.81	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.74	15	\$0.05	5%	15%	\$5.95	467.81	488.33	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.46	14	\$5.25	3%	75%	\$1,038.45	277.01	286.86	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.42	18	\$0.26	15%	20%	\$46.21	146.38	147.24	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	63.96	15	\$189.00	13%	25%	\$249.84	178.38	180.03	VENT_PMSM-Ventilation-AEG-2016-2
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	23.05	15	\$1,273.23	13%	50%	\$4,670.74	202.05	203.92	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.26	15	\$0.87	13%	50%	\$282.16	710.07	716.62	FAN_VSD-Ventilation-MIDATL-v3.0-13
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	10%	44%	\$770.32	63.20	63.78	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.94	15	\$0.76	3%	15%	\$34.93	126.74	131.25	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.92	15	\$0.76	3%	15%	\$34.93	773.24	780.37	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	8,139.58	15	\$7,501.21	15%	15%	\$38.16	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,926.45	15	\$7,501.21	15%	15%	\$38.16	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	78.83	81.44	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	Existing	206.45	15	\$410.87	15%	45%	\$171.12	1,737.57	1,770.10	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	199.42	15	\$698.92	15%	75%	\$301.33	3,250.42	3,296.35	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	312.05	20	\$685.47	15%	75%	\$103.36	176.73	194.31	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	196.13	20	\$685.47	15%	75%	\$103.36	27.25	27.25	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.03	5	\$0.75	30%	40%	\$75.84	603.22	620.04	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.58	5	\$0.75	30%	40%	\$75.84	65.01	66.46	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	30%	40%	\$75.84	203.02	204.21	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	131.66	10	\$8.63	25%	65%	\$7.34	486.44	500.45	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	144.67	10	\$17.56	25%	65%	\$13.60	267.26	274.95	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	35.85	10	\$16.82	25%	65%	\$52.58	65.40	67.06	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	0%	0%	\$6.29	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	506.64	15	\$15.38	16%	75%	\$2.62	1,140.02	1,168.82	AEG-BEST

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Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	539.62	4	\$75.87	25%	40%	\$32.74	738.38	757.03	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	619.62	635.27	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.93	1,972.66	2,022.50	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.42	15	\$0.36	3%	23%	\$76.65	742.79	784.56	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.59	15	\$0.60	3%	23%	\$90.34	1,039.91	1,098.39	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	111.62	15	\$56.14	1%	3%	\$48.75	39.75	46.13	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.57	15	\$65.99	1%	3%	\$121.67	1.49	1.72	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,033.95	11	\$26.48	15%	30%	\$0.94	313.11	332.66	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	310.67	16	\$1,864.95	5%	15%	\$512.51	213.75	227.10	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.64	9	\$0.65	15%	25%	\$50.09	800.81	869.14	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	93.64	8	\$56.85	15%	25%	\$84.28	425.64	461.95	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	117.09	7	\$3,486.31	15%	30%	\$4,581.66	798.32	866.44	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	111.45	12	\$50.74	11%	75%	\$45.80	95.40	98.20	RFG_ASH-Refrigeration-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	88.37	4	\$24.51	5%	35%	\$94.25	140.11	225.90	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	127.01	15	\$347.21	0%	0%	\$288.10	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	147.58	2	\$10.74	11%	75%	\$47.62	1,267.36	2,132.86	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	3.00	15	\$508.61	6%	38%	\$9,999.00	3,140.79	3,952.55	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	52.60	15	\$5,552.98	6%	38%	\$9,999.00	4,593.82	5,781.12	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	398.92	15	\$305.13	11%	75%	\$80.61	2,787.08	3,507.42	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,597.58	15	\$539.09	6%	38%	\$35.56	4,185.57	5,267.35	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	3,356.54	10	\$449.00	0%	0%	\$18.31	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	293.77	16	\$153.90	11%	75%	\$62.24	339.93	530.41	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	105.65	15	\$135.00	6%	38%	\$157.50	15.28	23.84	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,528.08	16	\$105.92	11%	75%	\$5.12	2,652.27	4,323.72	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,946.14	10	\$521.11	11%	75%	\$44.10	2,041.75	3,328.44	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	473.32	8	\$18,135.52	5%	35%	\$7,576.54	67.74	114.01	RFG_ADC-Refrigeration-PGE-R6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	680.03	12	\$605.15	5%	35%	\$107.64	1,662.87	2,092.64	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	49.75	8	\$15.90	0%	0%	\$42.93	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	5.13	8	\$3.87	0%	0%	\$101.36	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	18.03	5	\$49.37	0%	0%	\$536.35	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,370.65	5	\$288.64	25%	75%	\$41.36	1,880.22	1,945.74	VEND_CTRL-Miscellaneous-SCE-17R0-44
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,015.66	18	\$8,815.42	25%	50%	\$134.45	347.84	349.86	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	432.71	15	\$335.00	0%	0%	\$48.53	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	193.68	15	\$335.00	0%	0%	\$48.53	0.00	0.00	AEG - BEST
Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	23.98	4	\$37.32	10%	50%	\$305.37	190.69	154.30	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.01	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$3.25	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.25	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$3.25	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$18.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	669.68	18	\$4,231.40	0%	0%	\$483.34	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.04	10	\$1.85	0%	0%	\$5,104.89	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	134.82	7	\$423.28	0%	0%	\$458.97	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$458.97	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$458.97	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	21,182.17	15	\$1,114.41	0%	0%	\$4.54	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$4.54	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,489.70	6	\$37.07	1%	3%	\$4.00	139.07	139.07	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.08	20	\$0.78	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	1.56	25	\$4.24	0%	0%	\$37.17	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.14	25	\$4.24	0%	0%	\$37.17	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$37.17	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	2.14	25	\$4.24	0%	0%	\$37.17	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.83	25	\$4.24	0%	0%	\$37.17	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.24	0%	0%	\$37.17	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.32	3	\$0.42	0%	0%	\$74.46	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.42	0%	0%	\$74.46	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.42	0%	0%	\$74.46	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.35	3	\$0.42	0%	0%	\$74.46	0.00	0.00	COM_SEM-Water Heating-AEG-1
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.31	3	\$0.42	0%	0%	\$74.46	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.42	0%	0%	\$74.46	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.39	3	\$0.42	0%	0%	\$74.46	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.42	0%	0%	\$74.46	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	Existing	0.45	3	\$1.15	0%	0%	\$158.82	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	Existing	0.25	3	\$1.15	0%	0%	\$158.82	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	Existing	0.13	3	\$1.15	0%	0%	\$158.82	0.00	0.00	COM_CX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Commissioning	sqft	Existing	0.16	3	\$1.15	0%	0%	\$158.82	0.00	0.00	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.35	3	\$1.15	0%	0%	\$158.82	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.14	3	\$1.15	0%	0%	\$158.82	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.90	3	\$1.15	0%	0%	\$158.82	0.00	0.00	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.45	3	\$0.36	24%	79%	\$50.41	1,543.78	1,611.49	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.36	24%	79%	\$50.41	166.37	172.29	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.36	24%	79%	\$50.41	519.59	524.39	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.16	3	\$0.36	24%	79%	\$50.41	374.17	383.62	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.35	3	\$0.36	24%	79%	\$50.41	1,172.83	1,336.66	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.36	24%	79%	\$50.41	513.50	557.31	COM_RCX-Lighting-AEG-1
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.90	3	\$0.36	24%	79%	\$50.41	2,622.37	3,300.13	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.25	10	\$0.09	0%	0%	\$44.82	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	2.79	10	\$1.12	0%	0%	\$55.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.72	3	\$0.24	0%	0%	\$120.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	1.36	10	\$3.24	0%	0%	\$326.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.27	10	\$0.70	0%	0%	\$354.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	Existing	199.00	16	\$75.53	20%	75%	\$30.67	222.94	222.94	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,673.81	25	\$4,420.66	0%	0%	\$111.17	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$408.78	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.12	45	\$0.84	15%	50%	\$408.78	21.17	21.18	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$408.78	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.86	15%	50%	\$282.12	53.71	53.82	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$282.12	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$282.12	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.81	45%	50%	\$9,999.00	6.17	6.19	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$9,999.00	-1.08	-1.08	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-3.01	-3.01	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$7,590.41	-15.22	-15.25	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$7,590.41	5.71	5.71	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$7,590.41	15.85	15.85	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.33	18	\$0.59	15%	35%	\$9,999.00	1.01	1.01	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-3.54	18	\$0.59	15%	35%	\$9,999.00	-2.06	-2.06	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.65	18	\$0.59	15%	35%	\$9,999.00	-5.73	-5.73	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.44	30	\$37.07	66%	66%	\$531.15	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	2.26	30	\$37.07	66%	66%	\$531.15	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.60	30	\$37.07	66%	66%	\$531.15	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	99.37	5	\$267.96	18%	75%	\$508.96	161.47	162.65	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.55	15	\$0.05	10%	15%	\$7.83	46.87	47.08	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.45	14	\$5.25	6%	75%	\$1,028.04	68.66	68.70	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.38	18	\$0.26	15%	20%	\$50.68	58.43	58.43	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	115.51	15	\$189.00	19%	25%	\$137.17	20.04	20.04	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	41.62	15	\$1,273.23	19%	50%	\$2,564.32	39.81	39.80	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.24	15	\$0.44	19%	50%	\$154.91	139.89	139.89	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	44%	\$844.95	14.95	14.95	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.05	15	\$0.76	3%	15%	\$43.13	38.63	38.65	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.43	15	\$0.76	3%	15%	\$43.13	93.19	93.19	HVAC_DOAS-Heating-7PLN-v5-1
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	6,010.13	15	\$7,501.21	15%	15%	\$42.84	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,737.42	15	\$7,501.21	15%	15%	\$42.84	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	New	6.32	3	\$33.20	15%	45%	\$1,549.31	3.84	3.88	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	New	151.24	15	\$410.87	15%	45%	\$230.08	546.30	547.72	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	146.09	15	\$698.92	15%	75%	\$405.17	1,229.19	1,231.36	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	226.12	20	\$685.47	15%	75%	\$112.74	48.95	48.95	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	211.57	20	\$685.47	15%	75%	\$112.74	9.46	9.46	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.76	5	\$0.75	30%	40%	\$88.19	64.41	64.68	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.57	5	\$0.75	30%	40%	\$88.19	9.21	9.22	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.27	5	\$0.75	30%	40%	\$88.19	25.59	25.59	STAT_WIFI-AII-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	125.85	10	\$8.63	25%	65%	\$7.47	86.23	86.23	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	138.28	10	\$17.56	25%	65%	\$13.83	47.37	47.37	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	34.26	10	\$16.82	25%	65%	\$53.46	13.54	13.54	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	0%	0%	\$6.40	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	484.25	15	\$15.38	1%	75%	\$2.66	366.06	366.06	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	515.77	4	\$75.87	25%	40%	\$33.29	74.79	74.79	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	33.40	33.40	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.55	520.03	520.03	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.38	15	\$0.36	11%	23%	\$80.76	366.54	375.32	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.54	15	\$0.60	11%	23%	\$95.18	513.16	525.45	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	101.87	15	\$56.14	1%	3%	\$51.13	8.65	9.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	51.89	15	\$65.99	1%	3%	\$117.98	0.32	0.34	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,808.95	11	\$26.48	15%	30%	\$0.97	68.52	69.66	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	287.63	16	\$1,864.95	5%	15%	\$527.39	56.25	57.11	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.51	9	\$0.65	15%	25%	\$52.32	152.45	157.55	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	85.77	8	\$56.85	15%	25%	\$88.04	74.50	77.05	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	107.25	7	\$3,486.31	15%	30%	\$4,786.14	126.83	131.30	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	104.93	12	\$50.74	11%	75%	\$46.53	22.06	22.06	RFG_ASH-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	75.37	4	\$24.51	5%	35%	\$107.90	14.00	20.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	113.49	15	\$347.21	0%	0%	\$308.29	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	125.08	2	\$10.74	11%	75%	\$55.15	67.23	104.66	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	2.68	15	\$508.61	6%	38%	\$9,999.00	804.82	888.19	RFG_HECOMP-Refrigeration-AEO17-3
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	47.00	15	\$5,552.98	6%	38%	\$9,999.00	1,177.15	1,299.10	RFG_HECOMP-Refrigeration-AEO17-5
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	356.46	15	\$305.13	11%	75%	\$86.26	714.18	788.17	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,427.53	15	\$539.09	6%	38%	\$38.06	1,072.53	1,183.65	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	2,999.27	10	\$449.00	0%	0%	\$19.59	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	251.77	16	\$153.90	11%	75%	\$70.64	88.47	109.17	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	90.54	15	\$135.00	6%	38%	\$178.76	3.88	4.81	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	2,152.58	16	\$105.92	11%	75%	\$5.88	688.94	871.82	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,657.08	10	\$521.11	11%	75%	\$50.64	416.67	553.26	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	14.33	8	\$647.70	5%	35%	\$8,774.75	11.83	16.48	RFG_ASH-Refrigeration-NMTRM-2016-1
Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	607.65	12	\$5,648.09	5%	35%	\$1,075.06	382.26	426.21	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	46.69	8	\$15.90	0%	0%	\$43.66	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.81	8	\$3.87	0%	0%	\$103.09	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	16.91	5	\$49.37	0%	0%	\$545.59	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,279.72	5	\$288.64	25%	75%	\$42.14	231.32	231.32	VEND_CTRL-Miscellaneous-SCE-17R0-41
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,533.62	18	\$8,815.42	25%	50%	\$147.47	138.85	138.85	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	313.56	15	\$335.00	0%	0%	\$56.44	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	184.10	15	\$335.00	0%	0%	\$56.44	0.00	0.00	AEG - BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	22.82	4	\$37.32	10%	50%	\$329.89	17.37	14.45	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.99	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.99	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$2.99	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$10.98	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	605.32	18	\$4,231.40	0%	0%	\$530.17	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.04	10	\$1.71	0%	0%	\$4,800.79	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	128.86	7	\$423.28	0%	0%	\$466.62	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$466.62	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$466.62	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	20,246.21	15	\$1,114.41	0%	0%	\$4.61	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$4.61	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,489.70	6	\$37.07	1%	3%	\$4.00	35.58	35.58	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.08	20	\$0.70	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	1.54	25	\$4.24	10%	25%	\$35.90	477.18	477.91	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.15	25	\$4.24	10%	25%	\$35.90	68.26	68.27	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.54	25	\$4.24	10%	25%	\$35.90	189.59	189.59	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	2.18	25	\$4.24	10%	25%	\$35.90	445.59	445.59	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	1.80	25	\$4.24	10%	25%	\$35.90	2,213.82	2,261.22	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.72	25	\$4.24	10%	25%	\$35.90	724.05	733.55	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.24	3	\$0.33	0%	0%	\$64.32	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.33	0%	0%	\$64.32	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.33	0%	0%	\$64.32	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.34	3	\$0.33	0%	0%	\$64.32	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.28	3	\$0.33	0%	0%	\$64.32	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.33	0%	0%	\$64.32	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.35	3	\$0.33	0%	0%	\$64.32	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.33	0%	0%	\$64.32	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	New	0.33	3	\$0.88	24%	79%	\$133.49	561.54	563.12	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	New	0.25	3	\$0.88	24%	79%	\$133.49	80.33	80.36	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	New	0.11	3	\$0.88	24%	79%	\$133.49	223.11	223.10	COM_CX-HVAC-AEG-1
Restaurant	Water Heating	Commissioning	sqft	New	0.16	3	\$0.88	24%	79%	\$133.49	174.79	174.79	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	New	0.32	3	\$0.88	24%	79%	\$133.49	2,171.00	2,246.80	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.13	3	\$0.88	24%	79%	\$133.49	710.05	723.87	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	New	0.81	3	\$0.88	24%	79%	\$133.49	3,489.04	3,691.42	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	New	0.33	3	\$0.28	0%	0%	\$42.37	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	New	0.25	3	\$0.28	0%	0%	\$42.37	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.11	3	\$0.28	0%	0%	\$42.37	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.16	3	\$0.28	0%	0%	\$42.37	0.00	0.00	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.32	3	\$0.28	0%	0%	\$42.37	0.00	0.00	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.13	3	\$0.28	0%	0%	\$42.37	0.00	0.00	COM_RCX-Lighting-AEG-1

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Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.81	3	\$0.28	0%	0%	\$42.37	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.23	10	\$0.09	0%	0%	\$47.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	2.50	10	\$1.12	0%	0%	\$58.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.65	3	\$0.24	0%	0%	\$129.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	1.21	10	\$3.24	0%	0%	\$349.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.24	10	\$0.70	0%	0%	\$378.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	New	199.00	16	\$75.53	20%	75%	\$30.67	54.91	54.91	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,859.76	25	\$4,399.63	0%	0%	\$100.56	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.57	45	\$0.84	15%	35%	\$85.21	459.41	471.30	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$85.21	0.08	0.08	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$85.21	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.76	20	\$0.81	45%	50%	\$139.38	153.14	157.10	Building Energy Simulation Tool

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Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.23	20	\$0.81	45%	50%	\$139.38	-8.52	-8.68	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.81	45%	50%	\$139.38	-25.24	-25.42	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	4.61	45	\$1.70	15%	35%	\$17.81	612.54	628.41	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.62	45	\$1.70	15%	35%	\$17.81	15.33	15.61	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.27	45	\$1.70	15%	35%	\$17.81	45.43	45.75	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.96	18	\$0.59	15%	25%	\$14.49	3.98	4.08	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.15	18	\$0.59	15%	25%	\$14.49	0.04	0.04	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.07	18	\$0.59	15%	25%	\$14.49	0.11	0.11	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	17.28	30	\$37.07	48%	48%	\$52.83	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	21.46	30	\$37.07	48%	48%	\$52.83	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	5.49	30	\$37.07	48%	48%	\$52.83	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,695.00	10	\$914.46	15%	75%	\$14.99	3.31	3.34	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	634.55	15	\$248.07	15%	75%	\$33.03	43.69	44.06	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,589.49	15	\$263.92	15%	75%	\$14.03	10.94	11.04	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	47.23	15	\$248.07	15%	75%	\$440.33	1.26	1.26	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	51,027.15	10	\$1,796.53	15%	75%	\$3.83	9.75	9.75	AEG-BEST

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Grocery	Cooling	HVAC - Economizer	HP cool	Existing	235.94	5	\$267.96	18%	75%	\$217.58	1,298.01	1,337.41	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.76	15	\$0.05	5%	15%	\$5.79	333.38	346.85	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.86	14	\$5.25	3%	75%	\$164.97	203.82	209.70	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.40	18	\$0.26	15%	20%	\$48.91	101.24	101.94	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,249.02	15	\$189.00	13%	25%	\$12.81	124.52	125.87	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	450.09	15	\$1,273.23	13%	50%	\$239.46	141.04	142.57	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.25	15	\$0.04	13%	50%	\$14.47	495.66	501.04	FAN_VSD-Ventilation-MIDATL-v3.0-13
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	1%	34%	\$815.33	42.52	42.98	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.01	15	\$0.76	0%	11%	\$34.52	89.88	92.48	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.87	15	\$0.76	0%	11%	\$34.52	520.24	525.89	HVAC_DOAS-Heating-7PLN-v5-1
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	8,332.18	15	\$7,501.21	15%	15%	\$36.20	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,574.83	15	\$7,501.21	15%	15%	\$36.20	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	33.34	34.44	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	Existing	359.56	15	\$410.87	15%	45%	\$98.25	1,266.42	1,290.21	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	347.33	15	\$698.92	15%	75%	\$173.02	2,359.31	2,392.81	RTU_PREC-Cooling-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	543.48	20	\$1,175.09	15%	25%	\$96.02	17.61	19.36	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	391.08	20	\$1,175.09	15%	25%	\$96.02	8.29	8.29	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.06	5	\$0.75	30%	40%	\$73.63	425.89	436.91	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.63	5	\$0.75	30%	40%	\$73.63	47.39	48.25	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	30%	40%	\$73.63	140.41	141.38	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	121.48	10	\$8.63	25%	65%	\$7.96	98.70	101.55	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	133.48	10	\$17.56	25%	65%	\$14.74	54.23	55.80	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	33.07	10	\$16.82	25%	65%	\$56.99	13.25	13.58	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	0%	0%	\$6.29	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	467.31	15	\$15.38	16%	75%	\$2.84	230.88	236.73	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	497.86	4	\$75.87	25%	40%	\$35.49	149.57	153.37	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	125.52	128.70	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.58	399.70	409.83	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.13	15	\$0.36	3%	23%	\$28.14	1,512.66	1,564.68	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.59	15	\$0.60	3%	23%	\$33.16	2,117.73	2,190.55	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	443.03	15	\$56.14	1%	3%	\$11.50	35.47	38.57	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.60	15	\$65.99	1%	3%	\$113.85	1.20	1.31	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	8,140.58	11	\$26.48	15%	30%	\$0.35	620.30	660.17	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	833.58	16	\$1,864.95	5%	15%	\$191.11	423.45	450.67	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.20	9	\$0.65	15%	25%	\$70.76	513.96	563.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	91.46	8	\$56.85	15%	25%	\$88.64	273.18	299.24	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	114.36	7	\$3,486.31	15%	30%	\$4,818.82	512.37	561.26	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	291.91	12	\$50.74	33%	75%	\$17.49	1,854.85	1,909.54	RFG_ASH-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	17.86	4	\$3.68	27%	35%	\$51.80	42.12	46.19	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	700.21	15	\$347.21	23%	75%	\$44.02	19,290.87	20,111.67	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	135.29	2	\$10.74	33%	75%	\$51.95	102.18	172.19	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	16.52	15	\$508.61	16%	38%	\$2,732.77	5,279.85	5,504.51	RFG_HECOMP-Refrigeration-AEO15-4
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	289.99	15	\$5,552.98	16%	38%	\$1,699.93	7,722.48	8,051.06	RFG_HECOMP-Refrigeration-AEO15-4

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Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	733.08	15	\$305.13	33%	75%	\$36.95	4,685.24	4,884.60	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,321.11	15	\$539.09	16%	38%	\$36.23	7,036.18	7,335.56	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	2,775.67	10	\$449.00	15%	30%	\$18.65	10,435.16	10,879.16	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	281.18	16	\$153.90	33%	75%	\$46.86	1,265.71	1,320.21	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	101.12	15	\$135.00	16%	38%	\$118.57	56.90	59.35	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	237.75	16	\$105.92	33%	75%	\$49.49	331.82	470.50	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	183.03	10	\$521.11	33%	75%	\$426.18	255.44	362.19	RFG_DDEF-Refrigeration-VTTRM-1
Grocery	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	1,301.72	8	\$54,406.57	27%	35%	\$8,264.73	2.34	3.94	RFG_ADC-Refrigeration-PGE-R6-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	562.35	12	\$605.15	27%	35%	\$109.65	1,198.02	1,248.99	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	58.63	8	\$15.90	20%	75%	\$36.42	2,575.16	2,656.46	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	13.43	8	\$3.87	20%	75%	\$38.70	221.12	228.10	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	47.21	5	\$49.37	20%	75%	\$204.77	97.15	100.25	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	984.25	5	\$288.64	25%	75%	\$57.60	219.32	226.99	VEND_CTRL-Miscellaneous-SCE-17R0-32
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,744.19	18	\$8,815.42	25%	50%	\$142.30	240.56	242.23	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	439.62	15	\$335.00	0%	0%	\$43.46	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	251.86	15	\$335.00	0%	0%	\$43.46	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.54	4	\$37.32	10%	50%	\$620.01	66.27	57.88	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$4.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$65.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,303.41	18	\$4,231.40	0%	0%	\$140.69	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.99	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	124.38	7	\$423.28	0%	0%	\$497.46	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$497.46	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$497.46	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	19,543.21	15	\$1,114.41	0%	0%	\$4.92	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$4.92	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,230.70	6	\$37.07	1%	3%	\$4.84	23.09	23.09	ESTAR_WC-Miscellaneous-7PLN-v6-1
Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.22	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.86	25	\$4.24	0%	0%	\$41.22	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	1.21	25	\$4.24	0%	0%	\$41.22	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.83	25	\$4.24	0%	0%	\$41.22	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.54	25	\$4.24	0%	0%	\$41.22	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.96	25	\$4.24	0%	0%	\$41.22	0.00	0.00	ADVNC-AII-RSRCH-1

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Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.64	25	\$4.24	0%	0%	\$41.22	0.00	0.00	ADVNC-All-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.33	3	\$0.61	4%	27%	\$86.80	332.26	345.69	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.20	3	\$0.61	4%	27%	\$86.80	36.97	38.04	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.61	4%	27%	\$86.80	109.54	110.73	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.61	4%	27%	\$86.80	68.68	70.42	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.33	3	\$0.61	4%	27%	\$86.80	378.74	407.91	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.61	4%	27%	\$86.80	119.44	130.84	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	1.01	3	\$0.61	4%	27%	\$86.80	1,198.27	1,249.25	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.61	4%	27%	\$86.80	25.56	22.32	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	Existing	0.46	3	\$1.02	0%	0%	\$84.51	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	Existing	0.27	3	\$1.02	0%	0%	\$84.51	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Ventilation	Commissioning	sqft	Existing	0.12	3	\$1.02	0%	0%	\$84.51	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	Existing	0.04	3	\$1.02	0%	0%	\$84.51	0.00	0.00	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.39	3	\$1.02	0%	0%	\$84.51	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.13	3	\$1.02	0%	0%	\$84.51	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	Existing	2.33	3	\$1.02	0%	0%	\$84.51	0.00	0.00	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.46	3	\$0.32	10%	61%	\$26.82	1,020.13	1,061.36	COM_RCX-HVAC-AEG-1

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Grocery	Heating	Retrocommissioning	sqft	Existing	0.27	3	\$0.32	10%	61%	\$26.82	113.51	116.79	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.12	3	\$0.32	10%	61%	\$26.82	336.32	339.97	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.32	10%	61%	\$26.82	70.28	72.06	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.39	3	\$0.32	10%	61%	\$26.82	969.01	1,043.66	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.32	10%	61%	\$26.82	305.60	334.76	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.33	3	\$0.32	10%	61%	\$26.82	6,131.62	6,392.51	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.27	10	\$0.09	0%	0%	\$38.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	7.21	10	\$1.12	0%	0%	\$17.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.87	3	\$0.24	0%	0%	\$39.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	3.50	10	\$3.24	0%	0%	\$106.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.70	10	\$0.70	0%	0%	\$115.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	Existing	202.29	16	\$75.53	20%	75%	\$30.17	46.10	46.10	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,079.89	25	\$3,438.72	0%	0%	\$111.17	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.10	45	\$0.84	15%	50%	\$422.97	70.37	70.51	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$422.97	1.84	1.84	Building Energy Simulation Tool

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Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$422.97	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.66	20	\$0.81	45%	50%	\$103.84	67.05	67.18	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.81	45%	50%	\$103.84	-1.04	-1.04	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$103.84	-4.59	-4.59	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.11	45	\$1.70	15%	50%	\$757.33	56.93	57.04	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$757.33	0.83	0.83	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$757.33	3.67	3.67	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-6.63	18	\$0.59	15%	25%	\$9,999.00	-4.38	-4.39	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.35	18	\$0.59	15%	25%	\$9,999.00	0.04	0.04	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.24	18	\$0.59	15%	25%	\$9,999.00	0.19	0.19	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.45	30	\$37.07	66%	66%	\$224.56	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	4.82	30	\$37.07	66%	66%	\$224.56	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.89	30	\$37.07	66%	66%	\$224.56	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,448.26	10	\$914.46	15%	75%	\$18.28	0.61	0.61	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	516.38	15	\$248.07	15%	75%	\$40.28	9.99	9.99	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,293.50	15	\$263.92	15%	75%	\$17.11	2.50	2.50	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	37.92	15	\$248.07	15%	75%	\$548.41	0.28	0.28	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	40,578.53	10	\$1,796.53	15%	75%	\$4.82	1.73	1.73	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	204.39	5	\$267.96	18%	75%	\$247.43	152.68	153.78	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.66	15	\$0.05	10%	15%	\$6.55	41.71	41.91	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.77	14	\$5.25	6%	75%	\$165.89	53.28	53.32	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.60	18	\$0.26	15%	20%	\$32.57	72.04	72.04	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	238.67	15	\$189.00	19%	25%	\$66.39	24.80	24.80	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	86.00	15	\$1,273.23	19%	50%	\$1,241.20	49.27	49.27	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.37	15	\$0.33	19%	50%	\$74.98	173.15	173.15	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.04	15	\$0.23	1%	34%	\$542.90	17.83	17.83	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.12	15	\$0.76	0%	11%	\$26.36	28.89	28.91	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.30	15	\$0.76	0%	11%	\$26.36	218.17	218.17	HVAC_DOAS-Heating-7PLN-v5-1

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Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	7,184.63	15	\$7,501.21	15%	15%	\$38.38	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,284.24	15	\$7,501.21	15%	15%	\$38.38	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	New	7.48	3	\$33.20	15%	45%	\$1,309.41	2.07	2.09	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	New	311.67	15	\$410.87	15%	45%	\$111.65	509.89	511.22	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	301.07	15	\$698.92	15%	75%	\$196.61	1,145.67	1,147.72	RTU_PREC-Cooling-XCELCO-2017-18-1
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	393.82	20	\$1,175.09	15%	25%	\$119.15	5.26	5.26	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	316.13	20	\$1,175.09	15%	25%	\$119.15	2.32	2.32	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.91	5	\$0.75	30%	40%	\$73.01	56.99	57.24	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.61	5	\$0.75	30%	40%	\$73.01	7.11	7.11	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.41	5	\$0.75	30%	40%	\$73.01	31.49	31.49	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	116.11	10	\$8.63	25%	65%	\$8.09	18.81	18.81	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	127.58	10	\$17.56	25%	65%	\$14.98	10.33	10.33	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	31.61	10	\$16.82	25%	65%	\$57.94	2.95	2.95	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	0%	0%	\$6.40	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	446.67	15	\$15.38	1%	75%	\$2.89	79.72	79.72	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	475.86	4	\$75.87	25%	40%	\$36.08	16.31	16.31	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	7.28	7.28	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.20	113.29	113.29	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.05	15	\$0.36	11%	23%	\$29.07	818.27	825.44	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.47	15	\$0.60	11%	23%	\$34.26	1,145.57	1,155.62	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	409.10	15	\$56.14	1%	3%	\$11.88	8.34	8.54	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.46	15	\$65.99	1%	3%	\$106.86	0.28	0.29	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	7,536.85	11	\$26.48	15%	30%	\$0.36	145.98	148.66	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	771.76	16	\$1,864.95	5%	15%	\$196.68	119.79	121.82	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.09	9	\$0.65	15%	25%	\$74.12	105.56	108.69	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	83.41	8	\$56.85	15%	25%	\$92.85	51.57	53.16	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	104.30	7	\$3,486.31	15%	30%	\$5,047.59	87.82	90.64	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	274.83	12	\$50.74	41%	75%	\$17.76	369.19	369.19	RFG_ASH-Refrigeration-7PLN-v6-1

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Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	16.49	4	\$3.68	35%	35%	\$53.50	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	655.07	15	\$347.21	11%	75%	\$44.89	6,572.27	6,604.70	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	114.40	2	\$10.74	41%	75%	\$60.19	4.67	7.26	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	15.46	15	\$508.61	21%	38%	\$2,786.86	1,170.43	1,176.20	RFG_HECOMP-Refrigeration-AEO17-3
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	271.30	15	\$5,552.98	21%	38%	\$1,733.58	1,711.90	1,720.35	RFG_HECOMP-Refrigeration-AEO17-5
Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	685.83	15	\$305.13	41%	75%	\$37.68	1,038.61	1,043.74	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,235.95	15	\$539.09	21%	38%	\$36.94	1,559.76	1,567.46	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	2,596.75	10	\$449.00	20%	30%	\$19.02	1,551.97	1,561.20	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	262.99	16	\$153.90	41%	75%	\$47.79	287.34	288.77	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	94.58	15	\$135.00	21%	38%	\$120.94	12.61	12.68	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	206.90	16	\$105.92	41%	75%	\$54.74	74.57	87.24	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	159.27	10	\$521.11	41%	75%	\$471.41	45.13	54.59	RFG_DDEF-Refrigeration-VTTRM-1

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Grocery	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	13.10	8	\$647.70	35%	35%	\$9,576.59	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	526.10	12	\$2,541.64	35%	35%	\$469.63	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	55.03	8	\$15.90	20%	75%	\$37.04	492.31	492.31	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	12.60	8	\$3.87	20%	75%	\$39.36	42.27	42.27	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	44.29	5	\$49.37	20%	75%	\$208.30	12.86	12.86	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	918.95	5	\$288.64	25%	75%	\$58.69	29.04	29.04	VEND_CTRL-Miscellaneous-SCE-17R0-41
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	7,056.69	18	\$8,815.42	25%	50%	\$94.76	171.19	171.19	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	318.57	15	\$335.00	0%	0%	\$53.34	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	208.02	15	\$335.00	0%	0%	\$53.34	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	12.09	4	\$37.32	10%	50%	\$649.03	6.79	6.02	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$3.58	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.58	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.58	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$50.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,426.18	18	\$4,231.40	0%	0%	\$93.68	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.90	0%	0%	\$9,980.73	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	118.89	7	\$423.28	0%	0%	\$505.75	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$505.75	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$505.75	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	18,679.67	15	\$1,114.41	0%	0%	\$5.00	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$5.00	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,230.70	6	\$37.07	1%	3%	\$4.84	6.38	6.38	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.20	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.84	25	\$4.24	10%	15%	\$39.77	139.59	139.81	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	New	1.23	25	\$4.24	10%	15%	\$39.77	17.41	17.41	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.83	25	\$4.24	10%	15%	\$39.77	77.13	77.13	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.55	25	\$4.24	10%	15%	\$39.77	31.90	31.90	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.99	25	\$4.24	10%	15%	\$39.77	701.72	708.16	ADVNC-AII-RSRCH-1
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.64	25	\$4.24	10%	15%	\$39.77	164.66	166.26	ADVNC-AII-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	New	0.28	3	\$0.53	4%	27%	\$75.84	25.31	25.51	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.53	4%	27%	\$75.84	3.16	3.16	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.13	3	\$0.53	4%	27%	\$75.84	13.98	13.98	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.09	3	\$0.53	4%	27%	\$75.84	5.78	5.78	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.31	3	\$0.53	4%	27%	\$75.84	31.81	32.80	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.53	4%	27%	\$75.84	9.95	10.38	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	New	0.95	3	\$0.53	4%	27%	\$75.84	101.07	101.94	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.53	4%	27%	\$75.84	2.02	1.79	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	New	0.39	3	\$0.94	10%	61%	\$78.58	458.65	459.98	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	New	0.26	3	\$0.94	10%	61%	\$78.58	57.19	57.22	COM_CX-HVAC-AEG-1

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Grocery	Ventilation	Commissioning	sqft	New	0.18	3	\$0.94	10%	61%	\$78.58	253.41	253.41	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	New	0.04	3	\$0.94	10%	61%	\$78.58	34.94	34.94	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	New	0.36	3	\$0.94	10%	61%	\$78.58	1,921.33	1,948.14	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	New	0.11	3	\$0.94	10%	61%	\$78.58	450.84	458.15	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	New	2.18	3	\$0.94	10%	61%	\$78.58	14,856.01	14,897.38	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	New	0.39	3	\$0.30	0%	0%	\$24.94	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Heating	Retrocommissioning	sqft	New	0.26	3	\$0.30	0%	0%	\$24.94	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	New	0.18	3	\$0.30	0%	0%	\$24.94	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.30	0%	0%	\$24.94	0.00	0.00	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.36	3	\$0.30	0%	0%	\$24.94	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.30	0%	0%	\$24.94	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	New	2.18	3	\$0.30	0%	0%	\$24.94	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.25	10	\$0.09	0%	0%	\$39.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	6.74	10	\$1.12	0%	0%	\$18.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.75	3	\$0.24	0%	0%	\$40.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	3.28	10	\$3.24	0%	0%	\$108.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.66	10	\$0.70	0%	0%	\$117.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	New	202.29	16	\$75.53	20%	75%	\$30.17	12.21	12.21	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,213.15	25	\$3,404.84	0%	0%	\$100.56	0.00	0.00	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.40	45	\$0.84	15%	35%	\$48.14	313.86	329.59	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.61	45	\$0.84	15%	35%	\$48.14	23.97	24.25	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$48.14	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	1.05	20	\$0.86	15%	35%	\$63.04	822.45	863.67	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$63.04	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$63.04	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.93	20	\$0.81	45%	50%	\$90.42	181.91	191.02	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.81	45%	50%	\$90.42	-1.75	-1.77	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$90.42	-12.55	-12.84	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.34	45	\$1.70	15%	35%	\$10.94	-58.59	-61.53	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	6.90	45	\$1.70	15%	35%	\$10.94	59.76	60.44	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	2.26	45	\$1.70	15%	35%	\$10.94	427.68	437.48	Building Energy Simulation Tool

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Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	41.97	18	\$0.59	15%	50%	\$9,999.00	418.70	439.68	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-31.76	18	\$0.59	15%	50%	\$9,999.00	-15.93	-16.11	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-10.42	18	\$0.59	15%	50%	\$9,999.00	-113.98	-116.59	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	17.82	30	\$37.07	48%	48%	\$33.93	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	42.99	30	\$37.07	48%	48%	\$33.93	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	8.13	30	\$37.07	48%	48%	\$33.93	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	33,518.20	10	\$914.46	15%	75%	\$3.17	2,908.61	3,149.39	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	900.87	15	\$248.07	15%	75%	\$24.64	10,871.67	11,771.64	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,927.02	15	\$263.92	15%	75%	\$12.25	2,325.53	2,518.04	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	243.55	15	\$248.07	15%	75%	\$91.51	2,332.12	2,541.30	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	65,419.65	10	\$1,796.53	15%	75%	\$3.20	4,504.44	4,908.47	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	254.02	5	\$267.96	18%	75%	\$209.39	3,324.67	3,578.71	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.90	15	\$0.05	5%	15%	\$5.02	771.84	831.36	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.16	14	\$5.25	3%	75%	\$147.34	245.69	249.93	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.68	18	\$0.26	15%	20%	\$29.39	293.86	300.59	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	2,728.99	15	\$189.00	13%	25%	\$6.00	362.57	375.63	VENT_PMSM-Ventilation-AEG-2016-2

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Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	983.40	15	\$1,273.23	13%	50%	\$112.10	410.68	425.47	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.42	15	\$0.03	13%	50%	\$6.77	1,443.24	1,495.22	FAN_VSD-Ventilation-MIDATL-v3.0-13
Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.04	15	\$0.23	10%	20%	\$490.00	36.13	37.44	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	2.32	15	\$0.76	3%	7%	\$18.12	31.62	32.17	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.27	15	\$0.76	3%	7%	\$18.12	377.78	391.38	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	9,880.79	15	\$7,501.21	15%	15%	\$20.26	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	22,055.82	15	\$7,501.21	15%	15%	\$20.26	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.57	9.93	10.26	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	Existing	380.25	15	\$410.87	15%	45%	\$92.90	397.60	405.00	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	367.32	15	\$698.92	15%	75%	\$163.60	739.70	750.11	RTU_PREC-Cooling-XCELCO-2017-18-1
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	586.92	20	\$1,077.17	15%	25%	\$60.79	7.19	7.56	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	721.48	20	\$1,077.17	15%	25%	\$60.79	1.53	1.53	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.25	5	\$0.75	30%	40%	\$45.87	982.98	1,032.24	STAT_WIFI-AII-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.45	5	\$0.75	30%	40%	\$45.87	56.95	57.59	STAT_WIFI-AII-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.47	5	\$0.75	30%	40%	\$45.87	407.57	416.90	STAT_WIFI-AII-7PLN-v2-1

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Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	298.52	10	\$8.63	25%	65%	\$3.24	18.18	18.71	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	328.02	10	\$17.56	25%	65%	\$6.00	9.99	10.28	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	81.28	10	\$16.82	25%	65%	\$23.19	2.44	2.50	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	30%	\$6.29	32.77	33.27	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,148.72	15	\$15.38	16%	75%	\$1.16	42.52	43.60	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,223.48	4	\$75.87	25%	40%	\$14.44	27.54	28.24	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	23.11	23.70	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.55	73.59	75.46	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.91	15	\$0.36	3%	23%	\$34.93	2,148.74	2,229.41	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.28	15	\$0.60	3%	23%	\$41.17	3,008.24	3,121.18	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	319.41	15	\$56.14	1%	3%	\$15.94	60.40	65.95	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.61	15	\$65.99	1%	3%	\$113.77	1.99	2.17	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,559.44	11	\$26.48	15%	30%	\$0.43	889.19	944.59	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	671.68	16	\$1,864.95	5%	15%	\$237.03	607.01	644.83	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.74	9	\$0.65	15%	25%	\$46.44	304.56	324.31	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	120.24	8	\$56.85	15%	25%	\$64.36	161.88	172.38	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	150.34	7	\$3,486.31	15%	30%	\$3,498.90	303.61	323.31	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	21.05	12	\$50.74	4%	25%	\$242.45	25.14	25.88	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	7.01	4	\$24.51	4%	25%	\$984.78	5.44	6.79	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	32.55	15	\$347.21	0%	0%	\$970.54	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	27.88	2	\$10.74	4%	25%	\$252.09	8.57	14.44	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.77	15	\$508.61	2%	13%	\$9,999.00	127.83	136.46	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.48	15	\$5,552.98	2%	13%	\$9,999.00	186.96	199.59	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	102.23	15	\$305.13	4%	25%	\$271.56	113.43	121.09	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	409.42	15	\$539.09	2%	13%	\$119.80	170.35	181.86	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	860.20	10	\$449.00	0%	0%	\$61.68	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	48.65	16	\$153.90	4%	25%	\$284.21	18.72	20.53	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	17.50	15	\$135.00	2%	13%	\$719.24	0.84	0.92	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	269.47	16	\$105.92	4%	25%	\$43.59	28.06	39.71	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	207.44	10	\$521.11	4%	25%	\$375.37	21.60	30.57	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	89.41	8	\$18,135.52	4%	25%	\$9,999.00	0.98	1.65	RFG_ADC-Refrigeration-PGE-R6-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	174.27	12	\$605.15	4%	25%	\$362.61	145.02	154.82	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.40	8	\$15.90	0%	0%	\$227.24	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.97	8	\$3.87	0%	0%	\$536.59	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.41	5	\$49.37	0%	0%	\$2,839.27	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	894.33	5	\$288.64	25%	75%	\$63.39	103.66	107.29	VEND_CTRL-Miscellaneous-SCE-17R0-34
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	8,074.29	18	\$8,815.42	25%	50%	\$85.52	698.28	714.27	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	517.92	15	\$335.00	0%	0%	\$25.33	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	619.83	15	\$335.00	0%	0%	\$25.33	0.00	0.00	AEG - BEST

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Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	28.24	4	\$37.32	10%	50%	\$283.68	250.69	228.05	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$3.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$133.93	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	5,880.37	18	\$4,231.40	0%	5%	\$56.37	84.22	86.14	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	513.72	12	\$2,098.57	5%	7%	\$410.99	1.60	1.64	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.02	10	\$0.70	0%	5%	\$4,632.07	0.32	0.32	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	305.67	7	\$423.28	0%	5%	\$172.45	0.19	0.20	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	26.77	7	\$423.28	0%	5%	\$172.45	0.27	0.27	CW-Miscellaneous-RTF-v5.1-21

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Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	26.77	7	\$423.28	0%	5%	\$172.45	0.27	0.27	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	48,026.81	15	\$1,114.41	0%	5%	\$1.95	30.03	30.79	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,405.74	15	\$1,114.41	0%	5%	\$1.95	12.50	13.06	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	16,040.66	6	\$37.07	1%	3%	\$0.37	354.80	354.80	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.08	20	\$0.79	0%	5%	\$718.11	28.88	29.21	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.54	25	\$4.24	0%	0%	\$40.06	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	Existing	2.03	25	\$4.24	0%	0%	\$40.06	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.24	0%	0%	\$40.06	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	0.89	25	\$4.24	0%	0%	\$40.06	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.88	25	\$4.24	0%	0%	\$40.06	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$40.06	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	Existing	0.39	3	\$0.31	4%	28%	\$60.17	802.72	864.62	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	Existing	0.45	3	\$0.31	4%	28%	\$60.17	46.50	47.31	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.15	3	\$0.31	4%	28%	\$60.17	332.83	344.81	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.15	3	\$0.31	4%	28%	\$60.17	13.19	13.53	COM_SEM-Water Heating-AEG-1

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Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.32	3	\$0.31	4%	28%	\$60.17	672.54	727.63	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.31	4%	28%	\$60.17	73.86	78.65	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.31	4%	28%	\$60.17	60.54	64.63	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.31	4%	28%	\$60.17	100.89	91.77	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	Existing	0.54	3	\$1.78	0%	0%	\$284.93	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	Existing	0.62	3	\$1.78	0%	0%	\$284.93	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	Existing	0.20	3	\$1.78	0%	0%	\$284.93	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	Existing	0.07	3	\$1.78	0%	0%	\$284.93	0.00	0.00	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	Existing	0.37	3	\$1.78	0%	0%	\$284.93	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$1.78	0%	0%	\$284.93	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	Existing	0.07	3	\$1.78	0%	0%	\$284.93	0.00	0.00	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	Existing	0.54	3	\$0.57	12%	52%	\$90.44	1,852.43	1,995.27	COM_RCX-HVAC-AEG-1
Health	Heating	Retrocommissioning	sqft	Existing	0.62	3	\$0.57	12%	52%	\$90.44	107.32	109.17	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	Existing	0.20	3	\$0.57	12%	52%	\$90.44	768.07	795.73	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	Existing	0.07	3	\$0.57	12%	52%	\$90.44	10.15	10.41	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.37	3	\$0.57	12%	52%	\$90.44	1,293.35	1,399.29	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.57	12%	52%	\$90.44	142.03	151.24	COM_RCX-Lighting-AEG-1

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Health	Refrigeration	Retrocommissioning	sqft	Existing	0.07	3	\$0.57	12%	52%	\$90.44	232.86	248.59	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.26	10	\$0.09	0%	0%	\$39.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.20	10	\$1.12	0%	0%	\$650.51	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.24	0%	0%	\$1,426.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.10	10	\$3.24	0%	0%	\$3,857.28	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$4,185.59	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	Existing	216.71	16	\$75.53	20%	75%	\$28.17	58.45	58.45	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	12,426.81	25	\$20,545.49	0%	75%	\$111.17	1,424.22	1,432.52	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$158.29	23.48	23.49	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.24	45	\$0.84	15%	50%	\$158.29	8.44	8.44	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$158.29	20.52	20.52	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.49	20	\$0.86	15%	50%	\$125.94	375.11	375.23	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$125.94	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$125.94	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.18	20	\$0.81	45%	50%	\$3,122.82	19.56	19.57	Building Energy Simulation Tool

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Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.12	20	\$0.81	45%	50%	\$3,122.82	-0.60	-0.60	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$3,122.82	-4.71	-4.71	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$258.18	4.93	4.93	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.27	45	\$1.70	15%	50%	\$258.18	8.92	8.93	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.09	45	\$1.70	15%	50%	\$258.18	69.78	69.77	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	23.20	18	\$0.59	15%	35%	\$0.27	70.86	70.88	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	104.84	18	\$0.59	15%	35%	\$0.27	14.80	14.81	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	36.32	18	\$0.59	15%	35%	\$0.27	115.68	115.66	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	11.09	30	\$37.07	66%	66%	\$48.61	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	29.85	30	\$37.07	66%	66%	\$48.61	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	5.96	30	\$37.07	66%	66%	\$48.61	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	20,307.81	10	\$914.46	15%	75%	\$4.90	451.48	451.51	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	545.81	15	\$248.07	15%	75%	\$38.11	2,095.73	2,095.82	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,167.53	15	\$263.92	15%	75%	\$18.95	448.29	448.31	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	151.73	15	\$248.07	15%	75%	\$137.09	466.06	466.08	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	38,750.95	10	\$1,796.53	15%	75%	\$5.05	689.19	689.23	AEG-BEST

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Health	Cooling	HVAC - Economizer	HP cool	New	157.52	5	\$267.96	18%	75%	\$318.30	308.65	308.97	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.56	15	\$0.05	10%	15%	\$7.59	75.72	75.77	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.19	14	\$5.25	6%	75%	\$209.99	46.07	46.14	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.50	18	\$0.26	15%	20%	\$39.00	109.21	109.19	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	298.71	15	\$189.00	19%	25%	\$53.01	37.65	37.64	VENT_PMSM-Ventilation-AEG-2016-2
Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	107.64	15	\$1,273.23	19%	50%	\$990.97	74.79	74.76	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.22	19%	50%	\$59.87	262.83	262.73	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	10%	20%	\$650.17	7.90	7.90	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.85	15	\$0.76	3%	7%	\$26.64	7.29	7.30	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.55	15	\$0.76	3%	7%	\$26.64	49.23	49.21	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	6,149.99	15	\$7,501.21	15%	15%	\$29.39	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,312.50	15	\$7,501.21	15%	15%	\$29.39	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	New	6.29	3	\$33.20	15%	45%	\$1,557.75	0.53	0.54	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	New	277.14	15	\$410.87	15%	45%	\$125.56	138.05	138.42	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	267.71	15	\$698.92	15%	75%	\$221.11	310.05	310.60	RTU_PREC-Cooling-XCELCO-2017-18-1

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Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	468.68	20	\$1,077.17	15%	25%	\$77.81	2.24	2.24	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	527.87	20	\$1,077.17	15%	25%	\$77.81	0.40	0.40	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	30%	40%	\$66.08	103.25	103.32	STAT_WIFI-All-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.00	5	\$0.75	30%	40%	\$66.08	6.13	6.14	STAT_WIFI-All-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$66.08	47.95	47.93	STAT_WIFI-All-7PLN-v2-1
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	142.67	10	\$8.63	25%	65%	\$6.59	3.55	3.55	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	156.76	10	\$17.56	25%	65%	\$12.20	1.95	1.95	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	38.84	10	\$16.82	25%	65%	\$47.16	0.56	0.56	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	30%	\$6.40	11.98	11.98	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,097.96	15	\$15.38	1%	75%	\$1.17	15.03	15.03	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	584.71	4	\$75.87	25%	40%	\$29.36	3.07	3.07	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	1.37	1.37	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.17	21.35	21.35	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.84	15	\$0.36	11%	23%	\$36.19	1,187.28	1,201.08	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.18	15	\$0.60	11%	23%	\$42.66	1,662.19	1,681.51	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	294.48	15	\$56.14	1%	3%	\$16.50	14.50	14.92	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.36	15	\$65.99	1%	3%	\$107.05	0.48	0.49	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	6,072.98	11	\$26.48	15%	30%	\$0.45	214.29	217.76	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	621.86	16	\$1,864.95	5%	15%	\$243.89	175.82	178.45	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.60	9	\$0.65	15%	25%	\$48.40	63.98	65.04	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	110.49	8	\$56.85	15%	25%	\$67.07	31.25	31.79	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	138.15	7	\$3,486.31	15%	30%	\$3,646.12	53.23	54.16	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	19.82	12	\$50.74	4%	25%	\$246.30	6.40	6.40	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	6.27	4	\$24.51	4%	25%	\$1,052.56	0.61	0.70	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	30.29	15	\$347.21	0%	0%	\$994.84	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	23.56	2	\$10.74	4%	25%	\$292.14	0.50	0.78	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.71	15	\$508.61	2%	13%	\$9,999.00	36.24	36.86	RFG_HECOMP-Refrigeration-AEO17-3
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.54	15	\$5,552.98	2%	13%	\$9,999.00	53.01	53.91	RFG_HECOMP-Refrigeration-AEO17-5

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Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	95.12	15	\$305.13	4%	25%	\$278.36	32.16	32.71	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	380.95	15	\$539.09	2%	13%	\$122.80	48.29	49.12	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	800.38	10	\$449.00	0%	0%	\$63.22	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	44.84	16	\$153.90	4%	25%	\$293.72	5.43	5.58	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	16.13	15	\$135.00	2%	13%	\$743.28	0.24	0.25	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	234.49	16	\$105.92	4%	25%	\$48.19	8.07	9.43	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	180.51	10	\$521.11	4%	25%	\$414.97	4.89	5.90	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.70	8	\$647.70	4%	25%	\$9,999.00	0.19	0.26	RFG_ASH-Refrigeration-NMTRM-2016-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	162.16	12	\$5,648.09	4%	25%	\$3,469.12	36.91	37.61	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.82	8	\$15.90	0%	0%	\$231.12	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.91	8	\$3.87	0%	0%	\$545.73	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.19	5	\$49.37	0%	0%	\$2,888.23	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	835.00	5	\$288.64	25%	75%	\$64.59	14.05	14.05	VEND_CTRL-Miscellaneous-SCE-17R0-41
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	5,887.93	18	\$8,815.42	25%	50%	\$113.48	259.51	259.46	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	413.58	15	\$335.00	0%	0%	\$32.39	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	453.50	15	\$335.00	0%	0%	\$32.39	0.00	0.00	AEG - BEST
Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	27.39	4	\$37.32	10%	50%	\$291.38	27.10	24.67	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.65	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.65	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.65	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$50.50	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	4,288.09	18	\$4,231.40	0%	5%	\$74.79	31.30	31.29	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	483.66	12	\$2,098.57	5%	7%	\$417.52	0.41	0.41	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.02	10	\$0.65	0%	5%	\$4,368.16	0.07	0.07	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	292.16	7	\$423.28	0%	5%	\$175.11	0.03	0.03	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	25.60	7	\$423.28	0%	5%	\$175.11	0.05	0.05	CW-Miscellaneous-RTF-v5.1-21
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	25.60	7	\$423.28	0%	5%	\$175.11	0.05	0.05	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	45,904.68	15	\$1,114.41	0%	5%	\$1.98	8.51	8.51	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,300.89	15	\$1,114.41	0%	5%	\$1.98	3.53	3.53	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	8,020.33	6	\$37.07	1%	3%	\$0.74	100.58	100.58	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.08	20	\$0.71	0%	5%	\$649.59	8.40	8.40	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	New	1.57	25	\$4.24	10%	25%	\$38.25	756.52	756.71	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	New	2.02	25	\$4.24	10%	25%	\$38.25	44.94	44.96	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.70	25	\$4.24	10%	25%	\$38.25	351.32	351.28	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	New	0.91	25	\$4.24	10%	25%	\$38.25	17.95	17.95	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.91	25	\$4.24	10%	25%	\$38.25	3,640.29	3,684.02	ADVNC-AII-RSRCH-1

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Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$38.25	297.88	299.85	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	New	0.24	3	\$0.18	4%	28%	\$43.63	47.95	48.01	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	New	0.31	3	\$0.18	4%	28%	\$43.63	2.85	2.86	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.18	4%	28%	\$43.63	22.27	22.26	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	New	0.14	3	\$0.18	4%	28%	\$43.63	1.14	1.14	COM_SEM-Water Heating-AEG-1
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.30	3	\$0.18	4%	28%	\$43.63	57.69	59.86	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.18	4%	28%	\$43.63	6.29	6.42	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.18	4%	28%	\$43.63	5.23	5.38	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.18	4%	28%	\$43.63	8.42	7.65	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	New	0.34	3	\$0.95	12%	52%	\$197.30	650.66	650.96	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	New	0.43	3	\$0.95	12%	52%	\$197.30	38.65	38.68	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	New	0.15	3	\$0.95	12%	52%	\$197.30	302.16	302.09	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	New	0.06	3	\$0.95	12%	52%	\$197.30	5.15	5.15	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	New	0.34	3	\$0.95	12%	52%	\$197.30	2,609.09	2,655.79	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.95	12%	52%	\$197.30	213.50	215.58	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.95	12%	52%	\$197.30	525.46	530.54	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	New	0.34	3	\$0.30	0%	0%	\$62.62	0.00	0.00	COM_RCX-HVAC-AEG-1

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Health	Heating	Retrocommissioning	sqft	New	0.43	3	\$0.30	0%	0%	\$62.62	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.30	0%	0%	\$62.62	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	New	0.06	3	\$0.30	0%	0%	\$62.62	0.00	0.00	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	New	0.34	3	\$0.30	0%	0%	\$62.62	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.30	0%	0%	\$62.62	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.30	0%	0%	\$62.62	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.24	10	\$0.09	0%	0%	\$41.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.19	10	\$1.12	0%	0%	\$666.79	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.05	3	\$0.24	0%	0%	\$1,462.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.09	10	\$3.24	0%	0%	\$3,953.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$4,290.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	New	216.71	16	\$75.53	20%	75%	\$28.17	15.84	15.84	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	13,217.35	25	\$20,334.39	0%	75%	\$100.56	779.71	779.71	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$82.43	76.68	78.95	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.55	45	\$0.84	15%	35%	\$82.43	451.61	460.04	Building Energy Simulation Tool

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College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$82.43	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.68	20	\$0.86	15%	35%	\$95.35	781.08	804.24	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$95.35	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$95.35	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.50	20	\$0.81	45%	50%	\$239.02	289.05	297.62	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.21	20	\$0.81	45%	50%	\$239.02	-42.43	-43.23	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$239.02	-25.71	-26.06	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.13	45	\$1.70	15%	35%	\$905.18	-332.27	-342.12	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.20	45	\$1.70	15%	35%	\$905.18	179.03	182.37	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.04	45	\$1.70	15%	35%	\$905.18	108.46	109.95	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	30.87	18	\$0.59	15%	50%	\$2.68	497.38	512.13	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-11.24	18	\$0.59	15%	50%	\$2.68	-64.40	-65.60	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.11	18	\$0.59	15%	50%	\$2.68	-39.02	-39.55	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.44	30	\$37.07	48%	48%	\$147.95	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	11.15	30	\$37.07	48%	48%	\$147.95	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.21	30	\$37.07	48%	48%	\$147.95	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	19,309.81	10	\$914.46	15%	75%	\$5.33	967.93	1,004.01	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	554.88	15	\$248.07	15%	75%	\$38.75	3,868.06	4,012.24	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,278.74	15	\$263.92	15%	75%	\$17.89	891.41	924.64	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	134.92	5	\$267.96	18%	75%	\$382.00	2,375.85	2,456.09	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.50	15	\$0.05	5%	15%	\$8.81	634.43	663.59	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.08	14	\$5.25	3%	75%	\$437.12	1,922.11	1,977.12	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.29	18	\$0.26	15%	20%	\$67.68	193.62	196.27	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	240.86	15	\$189.00	13%	25%	\$67.09	240.11	245.27	VENT_PMSM-Ventilation-AEG-2016-2
College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	86.79	15	\$1,273.23	13%	50%	\$1,254.18	271.96	277.81	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.18	15	\$0.16	13%	50%	\$75.77	955.75	976.31	FAN_VSD-Ventilation-MIDATL-v3.0-13
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	10%	25%	\$1,128.24	36.31	37.09	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.74	15	\$0.76	3%	8%	\$27.45	375.32	386.06	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.64	15	\$0.76	3%	8%	\$27.45	444.19	453.74	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,503.92	15	\$7,501.21	15%	25%	\$29.36	599.18	626.73	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	16,520.95	15	\$7,501.21	15%	25%	\$29.36	639.92	658.23	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	67.57	69.82	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	Existing	173.82	15	\$410.87	15%	45%	\$203.24	1,229.29	1,252.46	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	167.90	15	\$698.92	15%	75%	\$357.90	2,281.82	2,314.36	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	268.21	20	\$979.24	15%	25%	\$89.09	41.24	43.40	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	538.03	20	\$979.24	15%	25%	\$89.09	505.13	505.13	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.70	5	\$0.75	30%	40%	\$72.91	803.87	827.70	STAT_WIFI-AII-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.08	5	\$0.75	30%	40%	\$72.91	443.25	451.53	STAT_WIFI-AII-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.20	5	\$0.75	30%	40%	\$72.91	268.53	272.22	STAT_WIFI-AII-7PLN-v2-1
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	174.04	10	\$8.63	25%	65%	\$5.56	260.86	268.42	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	191.24	10	\$17.56	25%	65%	\$10.29	143.32	147.47	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	47.39	10	\$16.82	25%	65%	\$39.78	34.96	35.85	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$6.29	155.76	158.15	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	669.56	15	\$15.38	16%	75%	\$1.98	609.29	624.78	AEG-BEST

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College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	713.31	4	\$75.87	25%	40%	\$24.77	394.72	404.76	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	331.24	339.66	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,478.07	1,054.45	1,081.26	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.50	15	\$0.36	3%	23%	\$64.34	1,765.85	1,819.55	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.69	15	\$0.60	3%	23%	\$75.83	2,472.18	2,547.38	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	323.05	15	\$56.14	1%	3%	\$15.46	47.71	50.93	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.62	15	\$65.99	1%	3%	\$111.59	2.10	2.25	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,553.86	11	\$26.48	15%	30%	\$0.80	734.16	774.28	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	363.91	16	\$1,864.95	5%	15%	\$436.39	501.18	528.57	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.53	9	\$0.65	15%	25%	\$153.10	619.88	655.32	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	48.10	8	\$56.85	15%	25%	\$160.36	329.47	348.31	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	60.15	7	\$3,486.31	15%	30%	\$8,717.44	617.96	653.28	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	14.31	12	\$50.74	4%	25%	\$356.71	7.60	7.83	RFG_ASH-Refrigeration-7PLN-v6-1

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College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.31	4	\$24.51	4%	25%	\$1,244.08	1.85	2.19	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	22.91	15	\$347.21	0%	0%	\$1,367.94	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	18.95	2	\$10.74	4%	25%	\$370.88	2.05	3.46	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.54	15	\$508.61	2%	13%	\$9,999.00	39.49	41.82	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.49	15	\$5,552.98	2%	13%	\$9,999.00	57.76	61.17	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	71.96	15	\$305.13	4%	25%	\$382.75	35.04	37.11	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	288.19	15	\$539.09	2%	13%	\$168.86	52.62	55.73	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	605.50	10	\$449.00	0%	0%	\$86.94	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	32.89	16	\$153.90	4%	25%	\$415.93	5.54	6.01	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	11.83	15	\$135.00	2%	13%	\$1,052.56	0.25	0.27	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	225.19	16	\$105.92	4%	25%	\$48.35	10.31	13.21	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	173.36	10	\$521.11	4%	25%	\$416.32	7.94	10.17	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	60.77	8	\$18,135.52	4%	25%	\$9,999.00	0.24	0.40	RFG_ADC-Refrigeration-PGE-R6-1

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College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	122.67	12	\$605.15	4%	25%	\$511.09	44.80	47.44	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.39	8	\$15.90	0%	0%	\$334.33	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.66	8	\$3.87	0%	0%	\$789.44	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.31	5	\$49.37	0%	0%	\$4,177.24	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,647.70	5	\$288.64	25%	75%	\$34.41	57.76	59.79	VEND_CTRL-Miscellaneous-SCE-17R0-31
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,462.60	18	\$8,815.42	25%	50%	\$196.92	460.07	466.39	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	260.35	15	\$335.00	0%	0%	\$38.32	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	487.13	15	\$335.00	0%	0%	\$38.32	0.00	0.00	AEG - BEST
College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	23.67	4	\$37.32	10%	50%	\$337.33	319.75	289.44	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.80	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.80	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.80	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$48.46	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,521.75	18	\$4,231.40	0%	5%	\$129.79	55.49	56.25	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	698.35	12	\$2,098.57	5%	7%	\$302.33	0.88	0.90	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-1
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	139.79	10	\$19.59	15%	75%	\$15.76	33.13	33.36	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	63.18	5	\$37,813.23	15%	75%	\$9,999.00	6.75	6.77	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.30	0%	5%	\$3,467.59	4.54	4.66	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	178.21	7	\$423.28	0%	5%	\$335.66	2.74	2.81	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.09	7	\$423.28	0%	5%	\$335.66	0.01	0.01	CW-Miscellaneous-RTF-v5.1-21
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.09	7	\$423.28	0%	5%	\$335.66	0.01	0.01	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	28,000.49	15	\$1,114.41	0%	5%	\$3.41	430.40	441.35	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	162.23	15	\$1,114.41	0%	5%	\$3.41	0.41	0.43	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,309.06	6	\$37.07	1%	3%	\$4.55	43.50	43.50	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.11	0%	5%	\$718.11	7.55	7.64	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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College	Cooling	Advanced New Construction Designs	sqft	Existing	0.95	25	\$4.24	0%	0%	\$56.54	0.00	0.00	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	Existing	1.99	25	\$4.24	0%	0%	\$56.54	0.00	0.00	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.40	25	\$4.24	0%	0%	\$56.54	0.00	0.00	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.52	25	\$4.24	0%	0%	\$56.54	0.00	0.00	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.95	25	\$4.24	0%	0%	\$56.54	0.00	0.00	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.24	0%	0%	\$56.54	0.00	0.00	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	Existing	0.22	3	\$0.11	3%	29%	\$36.17	714.79	747.65	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	Existing	0.34	3	\$0.11	3%	29%	\$36.17	394.13	405.41	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	Existing	0.06	3	\$0.11	3%	29%	\$36.17	238.77	243.91	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.11	3%	29%	\$36.17	204.87	210.08	COM_SEM-Water Heating-AEG-1
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.16	3	\$0.11	3%	29%	\$36.17	575.03	609.53	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.11	3%	29%	\$36.17	162.85	172.16	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.11	3%	29%	\$36.17	20.26	21.46	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.11	3%	29%	\$36.17	139.40	126.19	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	Existing	0.30	3	\$0.67	0%	0%	\$176.96	0.00	0.00	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	Existing	0.47	3	\$0.67	0%	0%	\$176.96	0.00	0.00	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	Existing	0.09	3	\$0.67	0%	0%	\$176.96	0.00	0.00	COM_CX-HVAC-AEG-1

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College	Water Heating	Commissioning	sqft	Existing	0.04	3	\$0.67	0%	0%	\$176.96	0.00	0.00	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	Existing	0.19	3	\$0.67	0%	0%	\$176.96	0.00	0.00	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$0.67	0%	0%	\$176.96	0.00	0.00	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.67	0%	0%	\$176.96	0.00	0.00	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	Existing	0.30	3	\$0.21	10%	46%	\$56.17	1,370.36	1,433.36	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	Existing	0.47	3	\$0.21	10%	46%	\$56.17	755.62	777.24	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	Existing	0.09	3	\$0.21	10%	46%	\$56.17	457.77	467.62	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.21	10%	46%	\$56.17	130.92	134.25	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.19	3	\$0.21	10%	46%	\$56.17	918.69	973.81	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.21	10%	46%	\$56.17	260.17	275.05	COM_RCX-Lighting-AEG-1
College	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.21	10%	46%	\$56.17	64.74	68.56	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$77.54	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.12	0%	0%	\$3,198.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$7,015.40	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	Existing	96.82	16	\$75.53	20%	75%	\$63.04	39.49	39.49	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	986.94	25	\$1,631.72	0%	75%	\$111.17	203.98	205.18	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$458.97	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.10	45	\$0.84	15%	50%	\$458.97	79.22	79.28	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$458.97	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.43	20	\$0.86	15%	50%	\$144.49	479.36	479.97	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$144.49	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$144.49	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.14	20	\$0.81	45%	50%	\$657.07	44.86	44.91	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$657.07	-4.84	-4.85	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$657.07	-3.18	-3.18	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$3,053.06	-21.37	-21.39	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$3,053.06	14.88	14.89	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$3,053.06	9.77	9.77	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	20.05	18	\$0.59	15%	35%	\$7.93	98.32	98.45	Building Energy Simulation Tool

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College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-11.91	18	\$0.59	15%	35%	\$7.93	-20.35	-20.37	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-2.44	18	\$0.59	15%	35%	\$7.93	-13.36	-13.36	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.80	30	\$37.07	66%	66%	\$66.61	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	New	25.46	30	\$37.07	66%	66%	\$66.61	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	3.00	30	\$37.07	66%	66%	\$66.61	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,815.82	10	\$914.46	15%	75%	\$8.43	148.63	148.63	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	339.54	15	\$248.07	15%	75%	\$61.26	737.42	737.42	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	782.47	15	\$263.92	15%	75%	\$28.28	169.94	169.94	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	88.79	5	\$267.96	18%	75%	\$567.03	228.49	229.41	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.34	15	\$0.05	10%	15%	\$12.64	66.81	67.00	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.98	14	\$5.25	6%	75%	\$469.67	499.72	500.51	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.29	18	\$0.26	15%	20%	\$66.76	99.93	99.93	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	478.25	15	\$189.00	19%	25%	\$33.12	34.53	34.53	VENT_PMSM-Ventilation-AEG-2016-2

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College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	172.34	15	\$1,273.23	19%	50%	\$619.21	68.59	68.58	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.18	15	\$0.08	19%	50%	\$37.41	241.04	241.01	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	25%	\$1,112.90	10.99	10.99	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.82	15	\$0.76	3%	8%	\$26.08	119.96	120.14	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.63	15	\$0.76	3%	8%	\$26.08	134.49	134.47	HVAC_DOAS-Heating-7PLN-v5-1
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,709.58	15	\$7,501.21	15%	25%	\$33.64	126.19	126.56	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,061.03	15	\$7,501.21	15%	25%	\$33.64	178.46	178.73	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	New	6.04	3	\$33.20	15%	45%	\$1,622.45	3.60	3.64	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	New	121.60	15	\$410.87	15%	45%	\$286.17	426.98	428.10	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	New	117.46	15	\$698.92	15%	75%	\$503.95	958.15	959.88	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	214.18	20	\$979.24	15%	25%	\$95.09	13.36	13.36	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	527.15	20	\$979.24	15%	25%	\$95.09	182.89	182.89	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.47	5	\$0.75	30%	40%	\$85.02	90.79	91.03	STAT_WIFI-AII-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.99	5	\$0.75	30%	40%	\$85.02	66.29	66.38	STAT_WIFI-AII-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.20	5	\$0.75	30%	40%	\$85.02	43.51	43.50	STAT_WIFI-AII-7PLN-v2-1

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College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	166.35	10	\$8.63	25%	65%	\$5.65	52.82	52.82	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	182.79	10	\$17.56	25%	65%	\$10.46	29.02	29.02	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	45.29	10	\$16.82	25%	65%	\$40.44	8.28	8.28	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$6.40	59.25	59.25	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	639.97	15	\$15.38	1%	75%	\$2.02	223.62	223.62	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	681.79	4	\$75.87	25%	40%	\$25.18	45.79	45.79	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	20.45	20.45	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.37	20	\$258.33	1%	30%	\$1,502.69	317.64	317.64	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.46	15	\$0.36	11%	23%	\$66.67	1,016.86	1,020.60	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.64	15	\$0.60	11%	23%	\$78.57	1,423.61	1,428.84	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	297.26	15	\$56.14	1%	3%	\$16.02	11.89	12.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.52	15	\$65.99	1%	3%	\$104.59	0.52	0.53	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,290.30	11	\$26.48	15%	30%	\$0.82	183.91	185.41	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	336.92	16	\$1,864.95	5%	15%	\$448.75	150.86	152.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.49	9	\$0.65	15%	25%	\$158.14	136.40	137.56	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	44.40	8	\$56.85	15%	25%	\$165.63	66.62	67.21	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	55.52	7	\$3,486.31	15%	30%	\$9,004.32	113.48	114.50	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	13.47	12	\$50.74	4%	25%	\$362.37	2.01	2.01	RFG_ASH-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.80	4	\$24.51	4%	25%	\$1,311.21	0.21	0.24	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	21.37	15	\$347.21	0%	0%	\$1,399.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	15.99	2	\$10.74	4%	25%	\$429.89	0.12	0.19	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.50	15	\$508.61	2%	13%	\$9,999.00	11.63	11.78	RFG_HECOMP-Refrigeration-AEO17-3
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.85	15	\$5,552.98	2%	13%	\$9,999.00	17.01	17.23	RFG_HECOMP-Refrigeration-AEO17-5
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	67.12	15	\$305.13	4%	25%	\$391.51	10.32	10.45	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	268.79	15	\$539.09	2%	13%	\$172.72	15.49	15.70	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	564.73	10	\$449.00	0%	0%	\$88.92	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	30.41	16	\$153.90	4%	25%	\$428.56	1.67	1.71	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	10.93	15	\$135.00	2%	13%	\$1,084.52	0.07	0.08	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	199.90	16	\$105.92	4%	25%	\$52.04	3.09	3.43	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	153.88	10	\$521.11	4%	25%	\$448.13	1.87	2.12	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.83	8	\$647.70	4%	25%	\$9,999.00	0.05	0.07	RFG_ASH-Refrigeration-NMTRM-2016-1
College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	114.41	12	\$5,648.09	4%	25%	\$4,879.28	11.85	12.02	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.99	8	\$15.90	0%	0%	\$340.03	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.62	8	\$3.87	0%	0%	\$802.90	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.17	5	\$49.37	0%	0%	\$4,249.27	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,538.39	5	\$288.64	25%	75%	\$35.06	8.13	8.13	VEND_CTRL-Miscellaneous-SCE-17R0-41
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,441.34	18	\$8,815.42	25%	50%	\$194.24	237.46	237.44	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	207.90	15	\$335.00	0%	0%	\$40.97	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	477.58	15	\$335.00	0%	0%	\$40.97	0.00	0.00	AEG - BEST

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College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	22.93	4	\$37.32	10%	50%	\$347.31	35.78	32.46	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.67	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.67	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.67	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$22.42	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,506.27	18	\$4,231.40	0%	5%	\$128.02	28.64	28.64	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	657.49	12	\$2,098.57	5%	7%	\$307.13	0.23	0.23	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
College	Miscellaneous	Pool Pump - Timer	perBldg	New	134.56	10	\$19.59	15%	75%	\$15.85	11.80	11.80	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	New	62.31	5	\$37,813.23	15%	75%	\$9,999.00	0.95	0.95	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.29	0%	5%	\$3,302.67	1.08	1.08	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	170.34	7	\$423.28	0%	5%	\$341.16	0.50	0.50	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	2.95	7	\$423.28	0%	5%	\$341.16	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	2.95	7	\$423.28	0%	5%	\$341.16	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	26,763.25	15	\$1,114.41	0%	5%	\$3.47	126.58	126.58	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	150.13	15	\$1,114.41	0%	5%	\$3.47	0.12	0.12	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,309.06	6	\$37.07	1%	3%	\$4.55	12.84	12.84	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.10	0%	5%	\$649.59	2.28	2.28	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
College	Cooling	Advanced New Construction Designs	sqft	New	0.95	25	\$4.24	10%	30%	\$54.51	882.77	883.63	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	New	1.99	25	\$4.24	10%	30%	\$54.51	644.55	644.88	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	New	0.41	25	\$4.24	10%	30%	\$54.51	423.06	423.04	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	30%	\$54.51	353.33	353.33	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.96	25	\$4.24	10%	30%	\$54.51	3,945.57	3,960.23	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	30%	\$54.51	839.52	842.59	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	New	0.15	3	\$0.09	3%	29%	\$30.12	45.85	46.08	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	New	0.31	3	\$0.09	3%	29%	\$30.12	33.48	33.57	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.09	3%	29%	\$30.12	21.98	21.97	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.09	3%	29%	\$30.12	18.35	18.35	COM_SEM-Water Heating-AEG-1

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College	Interior Lighting	Strategic Energy Management	sqft	New	0.15	3	\$0.09	3%	29%	\$30.12	51.24	51.86	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.09	3%	29%	\$30.12	14.54	14.69	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.09	3%	29%	\$30.12	1.82	1.86	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.09	3%	29%	\$30.12	12.05	10.90	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	New	0.20	3	\$0.49	10%	46%	\$145.71	513.57	514.49	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	New	0.43	3	\$0.49	10%	46%	\$145.71	374.98	375.33	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	New	0.09	3	\$0.49	10%	46%	\$145.71	246.12	246.10	COM_CX-HVAC-AEG-1
College	Water Heating	Commissioning	sqft	New	0.04	3	\$0.49	10%	46%	\$145.71	68.52	68.52	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	New	0.17	3	\$0.49	10%	46%	\$145.71	1,912.84	1,923.52	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.49	10%	46%	\$145.71	407.01	409.13	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.49	10%	46%	\$145.71	43.23	43.56	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	New	0.20	3	\$0.16	0%	0%	\$46.25	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	New	0.43	3	\$0.16	0%	0%	\$46.25	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	New	0.09	3	\$0.16	0%	0%	\$46.25	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.16	0%	0%	\$46.25	0.00	0.00	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	New	0.17	3	\$0.16	0%	0%	\$46.25	0.00	0.00	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.16	0%	0%	\$46.25	0.00	0.00	COM_RCX-Lighting-AEG-1

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College	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.16	0%	0%	\$46.25	0.00	0.00	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$80.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.04	10	\$1.12	0%	0%	\$3,271.50	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$7,175.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	New	96.82	16	\$75.53	20%	75%	\$63.04	11.11	11.11	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,039.10	25	\$1,598.62	0%	75%	\$100.56	115.12	115.12	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$156.56	63.41	65.27	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.30	45	\$0.84	15%	35%	\$156.56	256.36	264.83	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$156.56	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.34	20	\$0.86	15%	35%	\$190.69	645.90	664.90	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$190.69	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$190.69	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.25	20	\$0.81	45%	50%	\$499.87	239.02	246.05	Building Energy Simulation Tool

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School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.81	45%	50%	\$499.87	-24.09	-24.88	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.81	45%	50%	\$499.87	-25.77	-26.12	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.07	45	\$1.70	15%	35%	\$1,649.84	-274.76	-282.84	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.11	45	\$1.70	15%	35%	\$1,649.84	101.63	104.99	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.02	45	\$1.70	15%	35%	\$1,649.84	108.73	110.21	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	15.44	18	\$0.59	15%	50%	\$5.54	411.29	423.40	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.04	18	\$0.59	15%	50%	\$5.54	-36.56	-37.77	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.03	18	\$0.59	15%	50%	\$5.54	-39.11	-39.64	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	1.72	30	\$37.07	48%	48%	\$285.01	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	5.99	30	\$37.07	48%	48%	\$285.01	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.59	30	\$37.07	48%	48%	\$285.01	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	9,654.91	10	\$914.46	15%	75%	\$10.66	793.87	823.40	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	277.44	15	\$248.07	15%	75%	\$77.50	3,172.51	3,290.48	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	639.37	15	\$263.92	15%	75%	\$35.78	731.12	758.30	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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School	Cooling	HVAC - Economizer	HP cool	Existing	67.46	5	\$267.96	18%	75%	\$763.99	1,948.62	2,014.29	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.25	15	\$0.05	5%	15%	\$17.62	520.34	544.21	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.68	14	\$5.25	3%	75%	\$707.33	1,082.18	1,137.34	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.26	15%	20%	\$138.17	194.09	196.73	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	117.98	15	\$189.00	13%	25%	\$136.96	238.73	243.85	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	42.51	15	\$1,273.23	13%	50%	\$2,560.49	270.40	276.21	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.09	15	\$0.16	13%	50%	\$154.68	950.27	970.67	FAN_VSD-Ventilation-MIDATL-v3.0-13
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	24%	49%	\$2,303.38	60.70	62.00	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.94	15	\$0.76	8%	16%	\$53.02	355.33	373.44	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.31	15	\$0.76	8%	16%	\$53.02	742.64	758.58	HVAC_DOAS-Heating-7PLN-v5-1
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,751.96	15	\$7,501.21	15%	15%	\$56.34	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,884.04	15	\$7,501.21	15%	15%	\$56.34	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	110.68	114.35	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	Existing	86.91	15	\$410.87	15%	45%	\$406.48	1,016.20	1,035.29	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	83.95	15	\$698.92	15%	75%	\$715.80	1,893.17	1,920.05	RTU_PREC-Cooling-XCELCO-2017-18-1

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School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	134.11	20	\$979.24	15%	25%	\$154.53	33.92	35.69	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	329.55	20	\$979.24	15%	25%	\$154.53	172.75	172.75	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.35	5	\$0.75	30%	40%	\$141.74	664.74	684.30	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.58	5	\$0.75	30%	40%	\$141.74	251.61	259.93	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.10	5	\$0.75	30%	40%	\$141.74	269.19	272.85	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	87.08	10	\$8.63	25%	65%	\$11.10	205.64	211.58	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	95.69	10	\$17.56	25%	65%	\$20.56	112.98	116.25	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	23.71	10	\$16.82	25%	65%	\$79.50	27.60	28.30	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$6.29	123.98	125.87	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	335.01	15	\$15.38	16%	75%	\$3.96	481.03	493.22	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	356.91	4	\$75.87	25%	40%	\$49.50	311.63	319.53	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	261.51	268.14	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,478.07	832.48	853.58	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.34	15	\$0.36	3%	23%	\$92.90	2,512.36	2,582.29	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.48	15	\$0.60	3%	23%	\$109.49	3,517.31	3,615.21	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	229.91	15	\$56.14	1%	3%	\$22.57	65.64	71.90	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.59	15	\$65.99	1%	3%	\$116.00	1.55	1.70	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,457.62	11	\$26.48	15%	30%	\$1.16	1,033.75	1,086.93	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	251.66	16	\$1,864.95	5%	15%	\$630.42	705.69	742.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.46	9	\$0.65	15%	25%	\$171.98	939.59	987.23	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	43.88	8	\$56.85	15%	25%	\$174.67	499.40	524.72	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	54.86	7	\$3,486.31	15%	30%	\$9,495.48	936.67	984.17	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	15.11	12	\$50.74	4%	25%	\$337.80	40.25	41.43	RFG_ASH-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.61	4	\$24.51	4%	25%	\$1,178.12	9.77	11.57	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	24.19	15	\$347.21	0%	0%	\$1,295.42	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	20.01	2	\$10.74	4%	25%	\$351.22	10.87	18.31	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.57	15	\$508.61	2%	13%	\$9,999.00	209.06	221.36	RFG_HECOMP-Refrigeration-AEO15-4
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	10.02	15	\$5,552.98	2%	13%	\$9,999.00	305.78	323.77	RFG_HECOMP-Refrigeration-AEO15-4

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School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	75.99	15	\$305.13	4%	25%	\$362.46	185.52	196.43	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	304.33	15	\$539.09	2%	13%	\$159.91	278.61	295.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	639.40	10	\$449.00	0%	0%	\$82.33	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	34.73	16	\$153.90	4%	25%	\$393.88	29.35	31.82	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	12.49	15	\$135.00	2%	13%	\$996.76	1.32	1.43	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	237.80	16	\$105.92	4%	25%	\$45.78	54.59	69.90	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	183.06	10	\$521.11	4%	25%	\$394.25	42.02	53.81	RFG_DDEF-Refrigeration-VTTRM-1
School	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	64.18	8	\$18,135.52	4%	25%	\$9,999.00	1.24	2.10	RFG_ADC-Refrigeration-PGE-R6-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	129.54	12	\$605.15	4%	25%	\$483.99	237.19	251.14	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.74	8	\$15.90	0%	0%	\$316.60	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.69	8	\$3.87	0%	0%	\$747.59	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.44	5	\$49.37	0%	0%	\$3,955.77	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,844.55	5	\$288.64	25%	75%	\$30.73	342.32	354.30	VEND_CTRL-Miscellaneous-SCE-17R0-28
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,696.04	18	\$8,815.42	25%	50%	\$402.02	461.19	467.47	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	130.18	15	\$335.00	0%	0%	\$69.74	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	279.84	15	\$335.00	0%	0%	\$69.74	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	15.26	4	\$37.32	10%	50%	\$516.44	428.62	381.31	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.36	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.36	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.36	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$10.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,235.20	18	\$4,231.40	0%	0%	\$264.97	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	170.15	10	\$19.59	15%	75%	\$12.95	5.48	5.52	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	38.45	5	\$37,813.23	15%	75%	\$9,999.00	0.23	0.23	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.17	0%	0%	\$3,879.32	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	89.17	7	\$423.28	0%	0%	\$640.33	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.76	7	\$423.28	0%	0%	\$640.33	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.76	7	\$423.28	0%	0%	\$640.33	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	14,010.06	15	\$1,114.41	0%	0%	\$6.77	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	197.46	15	\$1,114.41	0%	0%	\$6.77	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	827.47	6	\$37.07	1%	3%	\$7.20	56.40	56.40	ESTAR_WC-Miscellaneous-7PLN-v6-1
School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.07	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.47	25	\$4.24	0%	0%	\$103.45	0.00	0.00	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	Existing	1.01	25	\$4.24	0%	0%	\$103.45	0.00	0.00	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$103.45	0.00	0.00	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$103.45	0.00	0.00	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.68	25	\$4.24	0%	0%	\$103.45	0.00	0.00	ADVNC-AII-RSRCH-1

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School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$103.45	0.00	0.00	ADVNC-All-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.04	2%	22%	\$21.38	450.96	471.65	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.04	2%	22%	\$21.38	170.70	179.39	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.04	2%	22%	\$21.38	182.62	186.54	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.04	2%	22%	\$21.38	124.42	127.57	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.04	2%	22%	\$21.38	609.44	658.97	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.04	2%	22%	\$21.38	189.88	199.50	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.04	2%	22%	\$21.38	82.52	87.37	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.04	2%	22%	\$21.38	143.74	127.88	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.21	0%	0%	\$97.54	0.00	0.00	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	Existing	0.25	3	\$0.21	0%	0%	\$97.54	0.00	0.00	COM_CX-HVAC-AEG-1
School	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.21	0%	0%	\$97.54	0.00	0.00	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.21	0%	0%	\$97.54	0.00	0.00	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.21	0%	0%	\$97.54	0.00	0.00	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.21	0%	0%	\$97.54	0.00	0.00	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	Existing	0.03	3	\$0.21	0%	0%	\$97.54	0.00	0.00	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	Existing	0.15	3	\$0.07	10%	47%	\$30.96	1,155.16	1,208.15	COM_RCX-HVAC-AEG-1

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School	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.07	10%	47%	\$30.96	437.24	459.53	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.07	10%	47%	\$30.96	467.79	477.83	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.07	10%	47%	\$30.96	106.23	108.93	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.07	10%	47%	\$30.96	1,300.93	1,406.64	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.07	10%	47%	\$30.96	405.31	425.86	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	Existing	0.03	3	\$0.07	10%	47%	\$30.96	352.28	373.01	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$113.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.11	10	\$1.12	0%	0%	\$1,226.26	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.03	3	\$0.24	0%	0%	\$2,689.74	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.05	10	\$3.24	0%	0%	\$7,271.28	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$7,890.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	Existing	88.17	16	\$75.53	20%	75%	\$69.23	72.99	72.99	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,066.97	25	\$1,764.04	0%	0%	\$111.17	0.00	0.00	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$904.99	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.05	45	\$0.84	15%	50%	\$904.99	40.94	40.98	Building Energy Simulation Tool

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School	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$904.99	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.86	15%	50%	\$288.99	371.15	371.61	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$288.99	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$288.99	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.81	45%	50%	\$1,320.82	34.73	34.77	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$1,320.82	-2.50	-2.51	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.81	45%	50%	\$1,320.82	-2.98	-2.98	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$6,019.71	-16.54	-16.56	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$1.70	15%	50%	\$6,019.71	7.69	7.70	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$6,019.71	9.17	9.17	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	10.02	18	\$0.59	15%	35%	\$16.21	76.14	76.24	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-6.06	18	\$0.59	15%	35%	\$16.21	-10.52	-10.53	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.19	18	\$0.59	15%	35%	\$16.21	-12.54	-12.54	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.90	30	\$37.07	66%	66%	\$132.06	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	New	12.95	30	\$37.07	66%	66%	\$132.06	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.47	30	\$37.07	66%	66%	\$132.06	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,907.91	10	\$914.46	15%	75%	\$16.85	114.64	114.64	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	169.77	15	\$248.07	15%	75%	\$122.51	569.02	569.02	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	391.24	15	\$263.92	15%	75%	\$56.56	131.13	131.13	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	44.40	5	\$267.96	18%	75%	\$1,134.08	176.19	176.90	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.17	15	\$0.05	10%	15%	\$25.29	51.55	51.70	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.58	14	\$5.25	6%	75%	\$791.39	257.31	258.03	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.14	18	\$0.26	15%	20%	\$136.29	93.82	93.81	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	234.26	15	\$189.00	19%	25%	\$67.62	32.30	32.30	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	84.42	15	\$1,273.23	19%	50%	\$1,264.17	64.16	64.15	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.09	15	\$0.08	19%	50%	\$76.37	225.48	225.44	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	24%	49%	\$2,272.07	17.29	17.29	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.92	15	\$0.76	8%	16%	\$51.89	103.88	104.16	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.31	15	\$0.76	8%	16%	\$51.89	211.54	211.51	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,854.74	15	\$7,501.21	15%	15%	\$66.52	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,659.97	15	\$7,501.21	15%	15%	\$66.52	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	New	6.04	3	\$33.20	15%	45%	\$1,622.49	5.55	5.61	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	New	60.80	15	\$410.87	15%	45%	\$572.36	330.20	331.06	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	New	58.73	15	\$698.92	15%	75%	\$1,007.92	741.92	743.25	RTU_PREC-Cooling-XCELCO-2017-18-1
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	107.09	20	\$979.24	15%	25%	\$163.94	10.32	10.32	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	322.89	20	\$979.24	15%	25%	\$163.94	58.72	58.72	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.24	5	\$0.75	30%	40%	\$169.02	70.44	70.62	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.50	5	\$0.75	30%	40%	\$169.02	34.32	34.41	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.10	5	\$0.75	30%	40%	\$169.02	40.92	40.92	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	83.23	10	\$8.63	25%	65%	\$11.29	39.19	39.19	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	91.46	10	\$17.56	25%	65%	\$20.90	21.53	21.53	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	22.66	10	\$16.82	25%	65%	\$80.82	6.15	6.15	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$6.40	44.23	44.23	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	320.21	15	\$15.38	1%	75%	\$4.03	166.09	166.09	AEG-BEST

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School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	341.14	4	\$75.87	25%	40%	\$50.33	33.98	33.98	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	15.17	15.17	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.37	20	\$258.33	1%	30%	\$1,502.69	235.96	235.96	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.32	15	\$0.36	11%	23%	\$96.07	1,359.51	1,362.62	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.44	15	\$0.60	11%	23%	\$113.23	1,903.32	1,907.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	212.57	15	\$56.14	1%	3%	\$23.33	15.47	15.82	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.31	15	\$65.99	1%	3%	\$109.32	0.37	0.37	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,275.36	11	\$26.48	15%	30%	\$1.19	243.65	244.87	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	232.99	16	\$1,864.95	5%	15%	\$648.12	199.94	200.87	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.43	9	\$0.65	15%	25%	\$177.17	194.72	195.56	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	40.58	8	\$56.85	15%	25%	\$179.93	95.13	95.55	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	50.74	7	\$3,486.31	15%	30%	\$9,781.67	162.00	162.73	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	14.23	12	\$50.74	4%	25%	\$343.16	10.01	10.01	RFG_ASH-Refrigeration-7PLN-v6-1

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School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	5.07	4	\$24.51	4%	25%	\$1,241.58	1.06	1.18	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	22.57	15	\$347.21	0%	0%	\$1,325.02	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	16.92	2	\$10.74	4%	25%	\$406.96	0.62	0.96	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.53	15	\$508.61	2%	13%	\$9,999.00	57.91	58.68	RFG_HECOMP-Refrigeration-AEO17-3
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	9.35	15	\$5,552.98	2%	13%	\$9,999.00	84.71	85.83	RFG_HECOMP-Refrigeration-AEO17-5
School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	70.89	15	\$305.13	4%	25%	\$370.74	51.39	52.07	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	283.88	15	\$539.09	2%	13%	\$163.56	77.18	78.20	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	596.43	10	\$449.00	0%	0%	\$84.21	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	32.12	16	\$153.90	4%	25%	\$405.83	8.32	8.51	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	11.55	15	\$135.00	2%	13%	\$1,026.99	0.37	0.37	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	211.29	16	\$105.92	4%	25%	\$49.28	15.39	17.08	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	162.65	10	\$521.11	4%	25%	\$424.31	9.31	10.57	RFG_DDEF-Refrigeration-VTTRM-1

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School	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.94	8	\$647.70	4%	25%	\$9,999.00	0.23	0.33	RFG_ASH-Refrigeration-NMTRM-2016-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	120.84	12	\$5,648.09	4%	25%	\$4,620.50	58.97	59.84	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.33	8	\$15.90	0%	0%	\$322.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.65	8	\$3.87	0%	0%	\$760.33	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.29	5	\$49.37	0%	0%	\$4,023.98	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,722.18	5	\$288.64	25%	75%	\$31.32	45.32	45.32	VEND_CTRL-Miscellaneous-SCE-17R0-41
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,685.63	18	\$8,815.42	25%	50%	\$396.56	222.93	222.91	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	103.95	15	\$335.00	0%	0%	\$74.19	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	274.61	15	\$335.00	0%	0%	\$74.19	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	14.76	4	\$37.32	10%	50%	\$534.90	44.67	39.97	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.27	0.00	0.00	com-datacenters-7p_v5p.xlsx

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School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.27	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.27	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$4.89	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,227.62	18	\$4,231.40	0%	0%	\$261.36	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
School	Miscellaneous	Pool Pump - Timer	perBldg	New	163.78	10	\$19.59	15%	75%	\$13.02	1.83	1.83	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	New	37.92	5	\$37,813.23	15%	75%	\$9,999.00	0.03	0.03	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.16	0%	0%	\$3,679.40	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	85.23	7	\$423.28	0%	0%	\$650.59	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.60	7	\$423.28	0%	0%	\$650.59	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.60	7	\$423.28	0%	0%	\$650.59	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	13,391.01	15	\$1,114.41	0%	0%	\$6.88	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	182.74	15	\$1,114.41	0%	0%	\$6.88	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	827.47	6	\$37.07	1%	3%	\$7.20	15.60	15.60	ESTAR_WC-Miscellaneous-7PLN-v6-1

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School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.06	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	New	0.47	25	\$4.24	10%	25%	\$99.09	517.56	518.05	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	New	1.01	25	\$4.24	10%	25%	\$99.09	252.20	252.43	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$99.09	300.69	300.67	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	25%	\$99.09	199.40	199.40	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.69	25	\$4.24	10%	25%	\$99.09	3,902.62	3,924.79	ADVNC-AII-RSRCH-1
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$99.09	911.23	913.11	ADVNC-AII-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.03	2%	22%	\$17.53	27.20	27.33	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	New	0.16	3	\$0.03	2%	22%	\$17.53	13.25	13.32	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.03	2%	22%	\$17.53	15.80	15.80	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.03	2%	22%	\$17.53	10.48	10.48	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.03	2%	22%	\$17.53	51.27	53.05	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.03	2%	22%	\$17.53	15.96	16.04	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.03	2%	22%	\$17.53	6.96	7.12	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.03	2%	22%	\$17.53	11.57	10.32	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	New	0.10	3	\$0.15	10%	47%	\$78.39	411.23	411.96	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	New	0.22	3	\$0.15	10%	47%	\$78.39	200.39	200.73	COM_CX-HVAC-AEG-1

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School	Ventilation	Commissioning	sqft	New	0.04	3	\$0.15	10%	47%	\$78.39	238.91	238.89	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	New	0.02	3	\$0.15	10%	47%	\$78.39	52.81	52.81	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.15	10%	47%	\$78.39	2,584.08	2,612.64	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.15	10%	47%	\$78.39	603.36	605.03	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.15	10%	47%	\$78.39	551.96	556.09	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	New	0.10	3	\$0.05	0%	0%	\$24.88	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Heating	Retrocommissioning	sqft	New	0.22	3	\$0.05	0%	0%	\$24.88	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.05	0%	0%	\$24.88	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.05	0%	0%	\$24.88	0.00	0.00	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.05	0%	0%	\$24.88	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.05	0%	0%	\$24.88	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.05	0%	0%	\$24.88	0.00	0.00	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.09	10	\$0.09	0%	0%	\$116.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.10	10	\$1.12	0%	0%	\$1,254.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.03	3	\$0.24	0%	0%	\$2,751.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.05	10	\$3.24	0%	0%	\$7,437.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$8,070.48	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	New	88.17	16	\$75.53	20%	75%	\$69.23	19.33	19.33	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,135.22	25	\$1,746.49	0%	0%	\$100.56	0.00	0.00	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$320.73	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$0.84	15%	35%	\$320.73	531.89	533.96	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$320.73	28.34	28.63	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.30	20	\$0.81	45%	50%	\$388.46	303.02	314.23	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.09	20	\$0.81	45%	50%	\$388.46	-88.65	-88.99	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$388.46	-53.55	-54.11	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.01	45	\$1.70	15%	35%	\$504.01	-10.21	-10.59	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.14	45	\$1.70	15%	35%	\$504.01	96.97	97.35	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.06	45	\$1.70	15%	35%	\$504.01	58.58	59.19	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.57	30	\$37.07	48%	48%	\$115.52	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.91	30	\$37.07	48%	48%	\$115.52	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.67	30	\$37.07	48%	48%	\$115.52	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,168.43	10	\$914.46	15%	75%	\$16.22	136.04	136.71	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	130.98	15	\$248.07	15%	75%	\$159.52	401.70	403.69	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	322.02	15	\$263.92	15%	75%	\$69.03	98.76	99.25	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	45.70	15	\$248.07	15%	75%	\$455.12	110.69	110.69	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	10,855.67	10	\$1,796.53	15%	75%	\$18.02	189.08	189.08	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	87.12	5	\$267.96	18%	75%	\$587.17	665.10	682.21	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.30	15	\$0.05	5%	15%	\$14.85	651.34	689.39	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.72	14	\$5.25	3%	75%	\$643.25	2,093.99	2,106.30	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	18	\$0.26	15%	20%	\$111.72	214.76	217.01	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	612.14	15	\$189.00	13%	25%	\$26.27	260.82	265.12	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	220.59	15	\$1,273.23	13%	50%	\$491.05	295.43	300.30	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.11	15	\$0.04	13%	50%	\$29.66	1,038.21	1,055.33	FAN_VSD-Ventilation-MIDATL-v3.0-13
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	3%	21%	\$1,862.43	49.69	50.51	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.42	15	\$0.76	1%	7%	\$79.86	515.19	518.22	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.38	15	\$0.76	1%	7%	\$79.86	607.96	617.98	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,304.55	15	\$7,501.21	15%	30%	\$88.27	922.74	976.64	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	4,002.98	15	\$7,501.21	15%	30%	\$88.27	1,045.71	1,051.86	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	29.20	30.16	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	Existing	172.58	15	\$410.87	15%	45%	\$204.69	540.04	550.14	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	166.71	15	\$698.92	15%	75%	\$360.46	1,011.75	1,026.01	RTU_PREC-Cooling-XCELCO-2017-18-1
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	266.31	20	\$1,419.90	15%	75%	\$247.69	4,064.15	4,275.62	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	161.22	20	\$1,419.90	15%	75%	\$247.69	3,563.16	3,563.16	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.42	5	\$0.75	30%	40%	\$180.09	842.72	873.89	STAT_WIFI-AII-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.26	5	\$0.75	30%	40%	\$180.09	493.08	495.00	STAT_WIFI-AII-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.12	5	\$0.75	30%	40%	\$180.09	297.86	300.98	STAT_WIFI-AII-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	432.32	10	\$8.63	25%	65%	\$2.24	538.42	553.90	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	475.04	10	\$17.56	25%	65%	\$4.14	295.81	304.32	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	117.71	10	\$16.82	25%	65%	\$16.01	72.43	74.26	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$6.29	329.51	334.45	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,663.35	15	\$15.38	16%	75%	\$0.80	1,262.42	1,294.27	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,771.86	4	\$75.87	25%	40%	\$9.97	817.76	838.40	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	686.24	703.55	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.76	2,184.99	2,240.13	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.36	3%	23%	\$314.51	629.57	681.41	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.60	3%	23%	\$370.67	881.39	953.97	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	428.06	15	\$56.14	1%	3%	\$12.90	57.33	68.76	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.60	15	\$65.99	1%	3%	\$123.43	1.46	1.75	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	740.59	11	\$26.48	15%	30%	\$3.83	275.00	288.53	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	75.84	16	\$1,864.95	5%	15%	\$2,090.63	187.73	196.97	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	6.33	9	\$0.65	15%	25%	\$12.57	1,917.41	2,010.89	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	203.84	8	\$56.85	15%	25%	\$37.41	1,019.12	1,068.80	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	254.88	7	\$3,486.31	15%	30%	\$2,033.86	1,911.46	2,004.64	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	56.74	12	\$50.74	0%	0%	\$89.97	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	13.16	4	\$24.51	0%	0%	\$461.30	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	76.08	15	\$347.21	0%	0%	\$403.31	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	75.13	2	\$10.74	0%	0%	\$93.54	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.80	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	31.51	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	238.97	15	\$305.13	0%	0%	\$112.85	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	957.00	15	\$539.09	0%	0%	\$49.79	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	2,010.67	10	\$449.00	0%	0%	\$25.63	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	127.81	16	\$153.90	0%	0%	\$102.93	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	45.96	15	\$135.00	0%	0%	\$260.47	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	456.10	16	\$105.92	0%	0%	\$22.56	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	351.11	10	\$521.11	0%	0%	\$194.23	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	240.96	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	407.36	12	\$605.15	0%	0%	\$150.69	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	25.33	8	\$15.90	0%	0%	\$84.32	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.61	8	\$3.87	0%	0%	\$199.11	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	9.18	5	\$49.37	0%	0%	\$1,053.54	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,834.83	5	\$288.64	25%	75%	\$30.90	605.86	626.94	VEND_CTRL-Miscellaneous-SCE-17R0-35
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,087.26	18	\$8,815.42	25%	50%	\$325.06	510.31	515.66	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	178.28	15	\$335.00	15%	75%	\$103.91	2,636.54	2,773.73	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	101.98	15	\$335.00	15%	75%	\$103.91	2,051.27	2,051.27	AEG - BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.88	4	\$37.32	10%	50%	\$1,308.60	151.94	131.06	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$20.44	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,533.52	18	\$4,231.40	0%	0%	\$128.55	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	245.88	10	\$19.59	15%	75%	\$8.96	53.73	54.09	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	111.12	5	\$63,022.06	15%	75%	\$9,999.00	9.50	9.53	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	perBldg	Existing	733.78	10	\$27,488.34	0%	0%	\$4,197.69	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	442.68	7	\$423.28	0%	0%	\$124.60	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	27.17	7	\$423.28	0%	0%	\$124.60	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	27.17	7	\$423.28	0%	0%	\$124.60	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	69,553.12	15	\$1,114.41	0%	0%	\$1.36	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,426.73	15	\$1,114.41	0%	0%	\$1.36	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,632.44	6	\$37.07	1%	3%	\$1.64	133.02	133.02	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.18	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.24	0%	0%	\$85.92	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.24	0%	0%	\$85.92	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.22	25	\$4.24	0%	0%	\$85.92	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.24	0%	0%	\$85.92	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.24	0%	0%	\$85.92	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.45	25	\$4.24	0%	0%	\$85.92	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.05	0%	0%	\$24.19	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.08	3	\$0.05	0%	0%	\$24.19	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.05	0%	0%	\$24.19	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.13	3	\$0.05	0%	0%	\$24.19	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.05	0%	0%	\$24.19	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.05	0%	0%	\$24.19	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.05	0%	0%	\$24.19	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.05	0%	0%	\$24.19	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.22	0%	0%	\$96.59	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	Existing	0.11	3	\$0.22	0%	0%	\$96.59	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.22	0%	0%	\$96.59	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	Existing	0.06	3	\$0.22	0%	0%	\$96.59	0.00	0.00	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.15	3	\$0.22	0%	0%	\$96.59	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.22	0%	0%	\$96.59	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.22	0%	0%	\$96.59	0.00	0.00	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.18	3	\$0.07	15%	76%	\$30.66	2,383.92	2,523.18	COM_RCX-HVAC-AEG-1
Lodging	Heating	Retrocommissioning	sqft	Existing	0.11	3	\$0.07	15%	76%	\$30.66	1,394.84	1,403.04	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.07	15%	76%	\$30.66	842.59	856.48	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.06	3	\$0.07	15%	76%	\$30.66	459.60	471.20	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.07	15%	76%	\$30.66	1,877.20	2,209.38	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.07	15%	76%	\$30.66	1,363.63	1,430.10	COM_RCX-Lighting-AEG-1

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Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$0.07	15%	76%	\$30.66	816.13	846.08	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$107.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.17	10	\$1.12	0%	0%	\$777.59	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.24	0%	0%	\$1,705.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.08	10	\$3.24	0%	0%	\$4,610.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$5,003.30	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	Existing	80.34	16	\$75.53	20%	75%	\$75.98	35.15	35.15	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,450.06	25	\$4,050.74	0%	75%	\$111.17	570.05	573.29	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,451.10	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$1,451.10	90.37	90.39	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,451.10	4.28	4.28	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.81	45%	50%	\$1,618.66	42.21	42.24	Building Energy Simulation Tool

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Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$1,618.66	-15.02	-15.02	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$1,618.66	-8.91	-8.91	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$9,999.00	6.40	6.40	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	3.79	3.79	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.05	30	\$37.07	66%	66%	\$261.24	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	4.50	30	\$37.07	66%	66%	\$261.24	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.17	30	\$37.07	66%	66%	\$261.24	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,294.22	10	\$914.46	15%	75%	\$18.81	23.76	23.76	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	112.41	15	\$248.07	15%	75%	\$185.01	87.20	87.20	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	276.38	15	\$263.92	15%	75%	\$80.06	21.44	21.44	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	42.99	15	\$248.07	15%	75%	\$483.76	26.14	26.14	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	9,227.16	10	\$1,796.53	15%	75%	\$21.20	32.46	32.46	AEG-BEST

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Lodging	Cooling	HVAC - Economizer	HP cool	New	81.71	5	\$267.96	18%	75%	\$617.90	76.25	76.71	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.25	15	\$0.05	10%	15%	\$16.93	74.13	74.24	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.67	14	\$5.25	6%	75%	\$681.87	463.66	463.92	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.16	18	\$0.26	15%	20%	\$121.40	84.39	84.39	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,670.28	15	\$189.00	19%	25%	\$9.49	28.90	28.90	VENT_PMSM-Ventilation-AEG-2016-2
Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	601.89	15	\$1,273.23	19%	50%	\$177.36	57.41	57.41	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.10	15	\$0.01	19%	50%	\$10.71	201.74	201.74	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	3%	21%	\$2,023.84	11.59	11.59	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.45	15	\$0.76	1%	7%	\$79.48	140.29	140.36	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.35	15	\$0.76	1%	7%	\$79.48	141.83	141.83	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,763.56	15	\$7,501.21	15%	30%	\$96.55	210.02	210.34	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	3,763.95	15	\$7,501.21	15%	30%	\$96.55	248.45	248.59	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	New	8.25	3	\$33.20	15%	45%	\$1,187.85	1.80	1.82	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	New	164.90	15	\$410.87	15%	45%	\$211.02	214.96	215.51	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	159.29	15	\$698.92	15%	75%	\$371.60	483.89	484.75	RTU_PREC-Cooling-XCELCO-2017-18-1

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Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	212.66	20	\$1,419.90	15%	75%	\$278.43	1,115.04	1,115.04	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	154.45	20	\$1,419.90	15%	75%	\$278.43	1,067.79	1,067.79	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$198.76	102.09	102.23	STAT_WIFI-All-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.25	5	\$0.75	30%	40%	\$198.76	62.35	62.38	STAT_WIFI-All-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.11	5	\$0.75	30%	40%	\$198.76	36.98	36.98	STAT_WIFI-All-7PLN-v2-1
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	413.22	10	\$8.63	25%	65%	\$2.27	92.87	92.87	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	454.05	10	\$17.56	25%	65%	\$4.21	51.02	51.02	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	112.51	10	\$16.82	25%	65%	\$16.28	14.59	14.59	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$6.40	105.75	105.75	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,589.85	15	\$15.38	1%	75%	\$0.81	394.39	394.39	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	1,693.57	4	\$75.87	25%	40%	\$10.14	80.56	80.56	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	35.97	35.97	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.39	560.44	560.44	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.10	15	\$0.36	11%	23%	\$331.17	297.68	315.07	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.13	15	\$0.60	11%	23%	\$390.31	416.75	441.09	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	394.19	15	\$56.14	1%	3%	\$13.45	12.10	13.44	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.11	15	\$65.99	1%	3%	\$119.63	0.31	0.34	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	685.67	11	\$26.48	15%	30%	\$3.94	58.63	58.81	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	70.21	16	\$1,864.95	5%	15%	\$2,149.02	48.14	48.27	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	5.83	9	\$0.65	15%	25%	\$13.09	355.70	356.81	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	187.66	8	\$56.85	15%	25%	\$38.96	173.83	174.38	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	234.66	7	\$3,486.31	15%	30%	\$2,117.81	295.92	296.89	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	53.42	12	\$50.74	0%	0%	\$91.39	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	12.22	4	\$24.51	0%	0%	\$474.37	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	71.35	15	\$347.21	0%	0%	\$410.48	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	63.73	2	\$10.74	0%	0%	\$108.31	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.68	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	29.55	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	224.11	15	\$305.13	0%	0%	\$114.85	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	897.51	15	\$539.09	0%	0%	\$50.67	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	1,885.69	10	\$449.00	0%	0%	\$26.09	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	119.61	16	\$153.90	0%	0%	\$104.94	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	43.01	15	\$135.00	0%	0%	\$265.56	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	412.26	16	\$105.92	0%	0%	\$23.83	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	317.36	10	\$521.11	0%	0%	\$205.22	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	7.30	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	382.04	12	\$5,648.09	0%	0%	\$1,431.40	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	23.77	8	\$15.90	0%	0%	\$85.76	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.45	8	\$3.87	0%	0%	\$202.50	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	8.61	5	\$49.37	0%	0%	\$1,071.71	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,713.11	5	\$288.64	25%	75%	\$31.48	72.50	72.50	VEND_CTRL-Miscellaneous-SCE-17R0-41
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,892.97	18	\$8,815.42	25%	50%	\$353.23	200.52	200.52	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	142.36	15	\$335.00	15%	75%	\$116.73	719.24	719.24	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	98.24	15	\$335.00	15%	75%	\$116.73	614.62	614.62	AEG - BEST
Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	5.66	4	\$37.32	10%	50%	\$1,374.32	14.01	12.26	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.43	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.43	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.43	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$14.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,297.70	18	\$4,231.40	0%	0%	\$139.69	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	236.67	10	\$19.59	15%	75%	\$9.01	16.15	16.15	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	New	109.60	5	\$63,022.06	15%	75%	\$9,999.00	1.14	1.14	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.51	0%	0%	\$3,970.71	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	423.12	7	\$423.28	0%	0%	\$126.56	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	25.99	7	\$423.28	0%	0%	\$126.56	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	25.99	7	\$423.28	0%	0%	\$126.56	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	66,479.81	15	\$1,114.41	0%	0%	\$1.38	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,320.32	15	\$1,114.41	0%	0%	\$1.38	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,632.44	6	\$37.07	1%	3%	\$1.64	33.05	33.05	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.16	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.71	25	\$4.24	10%	25%	\$82.58	758.48	758.85	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.50	25	\$4.24	10%	25%	\$82.58	463.25	463.33	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.22	25	\$4.24	10%	25%	\$82.58	274.76	274.76	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.79	25	\$4.24	10%	25%	\$82.58	482.51	482.51	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.77	25	\$4.24	10%	25%	\$82.58	3,113.82	3,247.78	ADVNC-AII-RSRCH-1

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Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.46	25	\$4.24	10%	25%	\$82.58	1,698.12	1,700.15	ADVNC-AII-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.04	0%	0%	\$21.01	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.04	0%	0%	\$21.01	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.04	0%	0%	\$21.01	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.04	0%	0%	\$21.01	0.00	0.00	COM_SEM-Water Heating-AEG-1
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.04	0%	0%	\$21.01	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.04	0%	0%	\$21.01	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.04	0%	0%	\$21.01	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.04	0%	0%	\$21.01	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	New	0.15	3	\$0.18	15%	76%	\$83.07	988.66	989.55	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	New	0.11	3	\$0.18	15%	76%	\$83.07	603.83	604.04	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	New	0.05	3	\$0.18	15%	76%	\$83.07	358.15	358.15	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	New	0.06	3	\$0.18	15%	76%	\$83.07	209.65	209.65	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.18	15%	76%	\$83.07	3,382.33	3,604.65	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$0.18	15%	76%	\$83.07	1,844.55	1,847.85	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	New	0.05	3	\$0.18	15%	76%	\$83.07	960.62	962.21	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.06	0%	0%	\$26.37	0.00	0.00	COM_RCX-HVAC-AEG-1

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Lodging	Heating	Retrocommissioning	sqft	New	0.11	3	\$0.06	0%	0%	\$26.37	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.06	0%	0%	\$26.37	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	New	0.06	3	\$0.06	0%	0%	\$26.37	0.00	0.00	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.06	0%	0%	\$26.37	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.06	0%	0%	\$26.37	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.05	3	\$0.06	0%	0%	\$26.37	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$112.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.16	10	\$1.12	0%	0%	\$791.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.04	3	\$0.24	0%	0%	\$1,735.93	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.08	10	\$3.24	0%	0%	\$4,692.81	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$5,092.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	New	80.34	16	\$75.53	20%	75%	\$75.98	8.42	8.42	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,576.45	25	\$3,963.77	0%	75%	\$100.56	270.13	270.13	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.21	45	\$0.84	15%	35%	\$72.23	985.61	1,010.02	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.43	45	\$0.84	15%	35%	\$72.23	732.28	734.80	Building Energy Simulation Tool

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Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$72.23	423.21	427.19	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.08	20	\$0.86	15%	35%	\$634.89	384.30	393.82	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	35%	\$634.89	30.97	31.08	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$634.89	17.90	18.07	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.28	20	\$0.81	45%	50%	\$9,999.00	328.54	336.67	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.29	20	\$0.81	45%	50%	\$9,999.00	-122.05	-122.47	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.81	45%	50%	\$9,999.00	-70.53	-71.20	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.02	45	\$1.70	15%	35%	\$29.98	15.11	15.49	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.05	45	\$1.70	15%	35%	\$29.98	976.37	979.73	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.12	45	\$1.70	15%	35%	\$29.98	564.28	569.58	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	13.18	18	\$0.59	15%	25%	\$1.32	61.96	63.50	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	20.38	18	\$0.59	15%	25%	\$1.32	34.39	34.51	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.78	18	\$0.59	15%	25%	\$1.32	19.87	20.06	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.52	30	\$37.07	48%	48%	\$76.63	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	23.93	30	\$37.07	48%	48%	\$76.63	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.53	30	\$37.07	48%	48%	\$76.63	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	142.03	5	\$267.96	18%	75%	\$361.50	2,638.74	2,719.38	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.28	15	\$0.05	5%	15%	\$15.74	712.18	739.81	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.33	14	\$5.25	3%	75%	\$62.95	2,907.34	2,923.21	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.04	18	\$0.26	15%	20%	\$445.20	282.87	285.53	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	324.90	15	\$189.00	13%	25%	\$49.42	346.46	351.58	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	117.08	15	\$1,273.23	13%	50%	\$923.97	392.42	398.22	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$0.02	13%	50%	\$55.82	1,379.09	1,399.48	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	9%	25%	\$7,421.86	57.65	58.51	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.29	15	\$0.76	3%	8%	\$46.18	624.78	628.19	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.10	15	\$0.76	3%	8%	\$46.18	705.38	715.81	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,062.35	15	\$7,501.21	15%	75%	\$41.44	4,035.69	4,192.28	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,280.04	15	\$7,501.21	15%	75%	\$41.44	5,807.55	5,839.25	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	113.85	117.62	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	Existing	216.17	15	\$410.87	15%	45%	\$163.42	2,612.66	2,661.66	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	208.82	15	\$698.92	15%	75%	\$287.78	4,876.53	4,945.62	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	333.56	20	\$1,958.49	15%	25%	\$144.61	87.91	92.50	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	659.96	20	\$1,958.49	15%	25%	\$144.61	695.49	695.49	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	30%	40%	\$116.47	913.69	936.32	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	30%	40%	\$116.47	678.85	681.18	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	30%	40%	\$116.47	392.33	396.02	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	64.83	10	\$8.63	25%	65%	\$14.92	221.87	228.27	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	71.23	10	\$17.56	25%	65%	\$27.62	121.90	125.41	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	17.65	10	\$16.82	25%	65%	\$106.80	29.80	30.56	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$6.29	134.44	136.47	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	249.36	15	\$15.38	16%	75%	\$5.32	519.33	532.47	AEG-BEST

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Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	265.68	4	\$75.87	25%	40%	\$66.50	336.48	344.99	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	282.36	289.51	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.76	899.04	921.79	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.06	15	\$0.36	3%	23%	\$499.58	2,173.98	2,247.96	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.09	15	\$0.60	3%	23%	\$588.79	3,043.58	3,147.15	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	599.58	15	\$56.14	1%	3%	\$8.39	247.27	266.63	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.68	15	\$65.99	1%	3%	\$112.29	13.99	15.09	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	457.37	11	\$26.48	15%	30%	\$6.23	889.75	941.83	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	46.83	16	\$1,864.95	5%	15%	\$3,395.33	607.39	642.94	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.22	9	\$0.65	15%	25%	\$65.80	2,637.36	2,802.11	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	103.60	8	\$56.85	15%	25%	\$74.19	1,401.77	1,489.34	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	129.54	7	\$3,486.31	15%	30%	\$4,033.23	2,629.17	2,793.40	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	128.68	12	\$50.74	0%	0%	\$39.67	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1

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Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	33.84	4	\$24.51	0%	0%	\$188.08	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	164.44	15	\$347.21	0%	0%	\$188.11	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	170.40	2	\$10.74	0%	0%	\$41.24	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	3.88	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	68.10	15	\$5,552.98	0%	0%	\$7,264.09	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	516.48	15	\$305.13	0%	0%	\$52.63	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	2,068.36	15	\$539.09	0%	0%	\$23.22	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,345.66	10	\$449.00	0%	0%	\$11.95	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	291.42	16	\$153.90	0%	0%	\$45.61	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	104.80	15	\$135.00	0%	0%	\$115.42	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,546.23	16	\$105.92	0%	0%	\$7.48	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,190.31	10	\$521.11	0%	0%	\$64.41	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	546.49	8	\$18,135.52	0%	0%	\$6,562.13	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1

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Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	880.43	12	\$605.15	0%	0%	\$70.28	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	57.44	8	\$15.90	0%	0%	\$37.18	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	5.92	8	\$3.87	0%	0%	\$87.79	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	20.81	5	\$49.37	0%	0%	\$464.53	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,674.43	5	\$288.64	25%	75%	\$33.86	284.25	294.18	VEND_CTRL-Miscellaneous-SCE-17R0-49
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	523.09	18	\$8,815.42	25%	50%	\$1,295.38	672.16	678.48	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	161.89	15	\$335.00	0%	0%	\$60.89	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	308.44	15	\$335.00	0%	0%	\$60.89	0.00	0.00	AEG - BEST
Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	8.02	4	\$37.32	10%	50%	\$931.64	1,155.47	958.81	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.94	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$8.60	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,269.87	18	\$4,231.40	0%	0%	\$256.13	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.73	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	66.38	7	\$423.28	0%	0%	\$932.19	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$932.19	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$932.19	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	10,429.24	15	\$1,114.41	0%	0%	\$9.22	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$9.22	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,511.91	6	\$37.07	1%	3%	\$1.32	432.13	432.13	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.15	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.48	25	\$4.24	0%	0%	\$116.11	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	1.22	25	\$4.24	0%	0%	\$116.11	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.05	25	\$4.24	0%	0%	\$116.11	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.06	25	\$4.24	0%	0%	\$116.11	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$116.11	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.24	0%	0%	\$116.11	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.12	3	\$0.03	3%	11%	\$19.27	246.89	256.47	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.03	3%	11%	\$19.27	183.43	184.43	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.03	3%	11%	\$19.27	106.01	107.58	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.03	3%	11%	\$19.27	53.74	55.10	COM_SEM-Water Heating-AEG-1
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.03	3%	11%	\$19.27	918.98	983.34	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.03	3%	11%	\$19.27	213.19	226.50	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.03	3%	11%	\$19.27	44.20	46.20	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.03	3%	11%	\$19.27	155.00	128.62	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	Existing	0.17	3	\$0.22	0%	0%	\$100.30	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	Existing	0.35	3	\$0.22	0%	0%	\$100.30	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	Existing	0.01	3	\$0.22	0%	0%	\$100.30	0.00	0.00	COM_CX-HVAC-AEG-1

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Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.22	0%	0%	\$100.30	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.22	0%	0%	\$100.30	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.22	0%	0%	\$100.30	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.22	0%	0%	\$100.30	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.17	3	\$0.07	11%	73%	\$31.84	2,649.31	2,752.11	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.35	3	\$0.07	11%	73%	\$31.84	1,968.37	1,979.12	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.01	3	\$0.07	11%	73%	\$31.84	1,137.59	1,154.40	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.07	11%	73%	\$31.84	192.21	197.07	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.07	11%	73%	\$31.84	8,217.81	8,793.34	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.07	11%	73%	\$31.84	1,906.38	2,025.47	COM_RCX-Lighting-AEG-1
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.07	11%	73%	\$31.84	790.59	826.27	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$140.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.03	10	\$1.12	0%	0%	\$4,295.48	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$9,421.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	Existing	140.90	16	\$75.53	20%	75%	\$43.32	163.01	163.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	7,058.43	25	\$11,669.83	0%	0%	\$111.17	0.00	0.00	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$143.60	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.33	45	\$0.84	15%	50%	\$143.60	456.48	456.48	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$143.60	4.91	4.91	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.08	20	\$0.86	15%	25%	\$633.81	91.44	91.60	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	25%	\$633.81	7.47	7.47	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$633.81	4.44	4.44	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.17	20	\$0.81	45%	50%	\$9,999.00	97.13	97.30	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.22	20	\$0.81	45%	50%	\$9,999.00	-43.47	-43.47	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$9,999.00	-25.84	-25.84	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$284.92	-6.91	-6.93	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.33	45	\$1.70	15%	50%	\$284.92	87.17	87.17	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$284.92	51.82	51.82	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	14.90	18	\$0.59	15%	25%	\$1.58	33.29	33.35	Building Energy Simulation Tool

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Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	13.02	18	\$0.59	15%	25%	\$1.58	10.07	10.07	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.50	18	\$0.59	15%	25%	\$1.58	5.98	5.98	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.33	30	\$37.07	66%	66%	\$104.54	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	18.04	30	\$37.07	66%	66%	\$104.54	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.40	30	\$37.07	66%	66%	\$104.54	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	82.69	5	\$267.96	18%	75%	\$611.68	201.83	203.30	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.17	15	\$0.05	10%	15%	\$25.45	60.32	60.57	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.52	14	\$5.25	6%	75%	\$83.07	553.11	553.11	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.03	18	\$0.26	15%	20%	\$576.22	100.21	100.21	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	283.81	15	\$189.00	19%	25%	\$55.83	34.44	34.44	VENT_PMSM-Ventilation-AEG-2016-2

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Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	102.27	15	\$1,273.23	19%	50%	\$1,043.76	68.41	68.41	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$0.02	19%	50%	\$63.05	240.40	240.40	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	9%	25%	\$9,606.09	12.07	12.07	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.12	15	\$0.76	3%	8%	\$53.59	146.15	146.15	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.07	15	\$0.76	3%	8%	\$53.59	147.62	147.62	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,847.58	15	\$7,501.21	15%	75%	\$56.72	683.66	686.46	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,256.11	15	\$7,501.21	15%	75%	\$56.72	1,185.38	1,185.38	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	New	5.03	3	\$33.20	15%	45%	\$1,949.67	4.59	4.64	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	New	125.84	15	\$410.87	15%	45%	\$276.51	681.70	683.48	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	121.56	15	\$698.92	15%	75%	\$486.94	1,532.70	1,535.43	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	262.10	20	\$1,958.49	15%	25%	\$177.61	25.44	25.44	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	531.69	20	\$1,958.49	15%	25%	\$177.61	187.90	187.90	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.23	5	\$0.75	30%	40%	\$162.94	82.65	82.95	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.61	5	\$0.75	30%	40%	\$162.94	73.99	73.99	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.02	5	\$0.75	30%	40%	\$162.94	43.98	43.98	STAT_WIFI-AII-7PLN-v2-1

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Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	61.96	10	\$8.63	25%	65%	\$15.17	40.92	40.92	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	68.08	10	\$17.56	25%	65%	\$28.08	22.48	22.48	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	16.87	10	\$16.82	25%	65%	\$108.58	6.42	6.42	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$6.40	46.33	46.33	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	238.34	15	\$15.38	1%	75%	\$5.41	173.54	173.54	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	253.94	4	\$75.87	25%	40%	\$67.60	35.49	35.49	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	15.85	15.85	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.39	246.63	246.63	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.36	11%	23%	\$523.38	1,126.10	1,131.09	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.08	15	\$0.60	11%	23%	\$616.84	1,576.55	1,583.52	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	546.76	15	\$56.14	1%	3%	\$8.79	55.77	56.56	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.03	15	\$65.99	1%	3%	\$106.49	3.16	3.20	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	423.45	11	\$26.48	15%	30%	\$6.41	202.75	205.28	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	43.36	16	\$1,864.95	5%	15%	\$3,492.71	166.41	168.32	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.12	9	\$0.65	15%	25%	\$68.46	523.56	532.92	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	95.46	8	\$56.85	15%	25%	\$77.19	255.81	260.48	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	119.36	7	\$3,486.31	15%	30%	\$4,196.06	435.58	443.70	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	121.15	12	\$50.74	0%	0%	\$40.30	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	30.97	4	\$24.51	0%	0%	\$196.01	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	153.89	15	\$347.21	0%	0%	\$191.83	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	144.22	2	\$10.74	0%	0%	\$47.78	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	3.63	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	63.74	15	\$5,552.98	0%	0%	\$7,407.73	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	483.36	15	\$305.13	0%	0%	\$53.67	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,935.72	15	\$539.09	0%	0%	\$23.68	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	4,066.99	10	\$449.00	0%	0%	\$12.19	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	271.86	16	\$153.90	0%	0%	\$46.63	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	97.76	15	\$135.00	0%	0%	\$118.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,352.58	16	\$105.92	0%	0%	\$8.22	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,041.23	10	\$521.11	0%	0%	\$70.79	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	16.52	8	\$647.70	0%	0%	\$7,602.12	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	823.97	12	\$5,648.09	0%	0%	\$668.92	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	53.90	8	\$15.90	0%	0%	\$37.81	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	5.55	8	\$3.87	0%	0%	\$89.29	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	19.52	5	\$49.37	0%	0%	\$472.55	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,563.35	5	\$288.64	25%	75%	\$34.50	36.41	36.41	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	398.82	18	\$8,815.42	25%	50%	\$1,676.61	238.12	238.12	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	127.21	15	\$335.00	0%	0%	\$74.29	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	250.87	15	\$335.00	0%	0%	\$74.29	0.00	0.00	AEG - BEST

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Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	7.67	4	\$37.32	10%	50%	\$995.28	111.28	94.57	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$0.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$3.40	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	968.17	18	\$4,231.40	0%	0%	\$331.51	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ-ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.66	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	63.44	7	\$423.28	0%	0%	\$947.72	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$947.72	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$947.72	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	9,968.41	15	\$1,114.41	0%	0%	\$9.37	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$9.37	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,511.91	6	\$37.07	1%	3%	\$1.32	115.38	115.38	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.13	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.47	25	\$4.24	10%	15%	\$113.56	203.20	203.47	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	New	1.22	25	\$4.24	10%	15%	\$113.56	181.90	181.90	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.05	25	\$4.24	10%	15%	\$113.56	108.12	108.12	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.06	25	\$4.24	10%	15%	\$113.56	69.91	69.91	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	15%	\$113.56	4,722.19	4,745.74	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.24	10%	15%	\$113.56	822.32	828.52	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.02	3%	11%	\$14.36	12.73	12.81	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.02	3%	11%	\$14.36	11.39	11.39	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.02	3%	11%	\$14.36	6.77	6.77	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.02	3%	11%	\$14.36	4.38	4.38	COM_SEM-Water Heating-AEG-1

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Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.02	3%	11%	\$14.36	73.94	75.37	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.02	3%	11%	\$14.36	17.17	17.51	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.02	3%	11%	\$14.36	3.61	3.65	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.02	3%	11%	\$14.36	11.53	9.76	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	New	0.10	3	\$0.13	11%	73%	\$73.27	810.27	812.29	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	New	0.26	3	\$0.13	11%	73%	\$73.27	725.35	725.35	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.13	11%	73%	\$73.27	431.15	431.15	COM_CX-HVAC-AEG-1
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.13	11%	73%	\$73.27	92.92	92.92	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.13	11%	73%	\$73.27	15,691.57	15,817.68	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.13	11%	73%	\$73.27	2,732.53	2,761.86	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.13	11%	73%	\$73.27	166.50	167.14	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	New	0.10	3	\$0.04	0%	0%	\$23.26	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	New	0.26	3	\$0.04	0%	0%	\$23.26	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.04	0%	0%	\$23.26	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.04	0%	0%	\$23.26	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.04	0%	0%	\$23.26	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.04	0%	0%	\$23.26	0.00	0.00	COM_RCX-Lighting-AEG-1

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Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.04	0%	0%	\$23.26	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$146.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.03	10	\$1.12	0%	0%	\$4,380.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$9,608.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	New	140.90	16	\$75.53	20%	75%	\$43.32	41.78	41.78	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	7,490.58	25	\$11,523.97	0%	0%	\$100.56	0.00	0.00	WHP Analysis
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$0.84	15%	35%	\$80.34	33.79	34.38	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$0.84	15%	35%	\$80.34	9.34	9.39	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$80.34	25.09	25.32	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.07	20	\$0.86	15%	50%	\$736.76	23.06	23.46	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	50%	\$736.76	0.69	0.69	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$736.76	1.86	1.87	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.23	20	\$0.81	45%	50%	\$9,999.00	11.26	11.46	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.24	20	\$0.81	45%	50%	\$9,999.00	-1.56	-1.56	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.81	45%	50%	\$9,999.00	-4.18	-4.22	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$1.70	15%	35%	\$32.51	0.52	0.53	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.57	45	\$1.70	15%	35%	\$32.51	12.45	12.51	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.36	45	\$1.70	15%	35%	\$32.51	33.45	33.76	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	11.06	18	\$0.59	15%	50%	\$1.48	7.43	7.57	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	17.19	18	\$0.59	15%	50%	\$1.48	1.54	1.54	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.38	18	\$0.59	15%	50%	\$1.48	4.12	4.16	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.64	30	\$37.07	48%	48%	\$86.94	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	20.19	30	\$37.07	48%	48%	\$86.94	0.00	0.00	WND_FLM-Heating-7PLN-v3-2

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Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.61	30	\$37.07	48%	48%	\$86.94	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,835.78	10	\$914.46	15%	75%	\$17.26	16.92	17.13	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	233.13	15	\$248.07	15%	75%	\$90.23	93.99	95.15	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	848.93	15	\$263.92	15%	75%	\$26.36	34.23	34.65	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	40.01	15	\$248.07	15%	75%	\$519.77	1.64	1.64	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	24,951.39	10	\$1,796.53	15%	75%	\$7.84	7.37	7.37	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	119.23	5	\$267.96	18%	75%	\$428.07	98.23	100.45	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.23	15	\$0.05	5%	15%	\$18.58	24.41	25.09	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	6.18	14	\$5.25	3%	75%	\$74.80	37.08	37.37	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.26	15%	20%	\$145.51	16.77	16.93	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	994.05	15	\$189.00	13%	25%	\$16.15	20.54	20.84	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	358.21	15	\$1,273.23	13%	50%	\$301.99	23.26	23.61	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.08	15	\$0.02	13%	50%	\$18.24	81.75	82.96	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	9%	25%	\$2,425.77	3.42	3.47	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.09	15	\$0.76	3%	8%	\$46.44	7.97	8.03	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.30	15	\$0.76	3%	8%	\$46.44	41.81	42.43	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,570.64	15	\$7,501.21	15%	15%	\$49.17	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,356.42	15	\$7,501.21	15%	15%	\$49.17	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	2.70	2.79	RTU_MNT-Cooling-PGE-R2-1
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	Existing	190.58	15	\$410.87	15%	45%	\$185.36	54.70	55.73	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	184.10	15	\$698.92	15%	75%	\$326.41	102.11	103.55	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	294.09	20	\$1,958.49	15%	25%	\$168.50	1.69	1.78	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	559.01	20	\$1,958.49	15%	25%	\$168.50	7.90	7.90	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.33	5	\$0.75	30%	40%	\$129.55	31.32	31.88	STAT_WIFI-All-7PLN-v2-1

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Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.68	5	\$0.75	30%	40%	\$129.55	8.66	8.70	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.09	5	\$0.75	30%	40%	\$129.55	23.26	23.47	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	112.37	10	\$8.63	25%	65%	\$8.61	7.56	7.78	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	123.47	10	\$17.56	25%	65%	\$15.93	4.16	4.28	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	30.59	10	\$16.82	25%	65%	\$61.61	1.02	1.04	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$6.29	4.58	4.65	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	432.23	15	\$15.38	16%	75%	\$3.07	17.70	18.15	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	460.53	4	\$75.87	25%	40%	\$38.36	11.47	11.76	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	9.63	9.87	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.76	30.65	31.42	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.06	15	\$0.36	13%	38%	\$499.58	54.77	56.64	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.09	15	\$0.60	13%	38%	\$588.79	76.68	79.29	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	599.58	15	\$56.14	1%	3%	\$8.39	4.79	5.17	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.68	15	\$65.99	1%	3%	\$112.29	0.27	0.29	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	457.37	11	\$26.48	15%	30%	\$6.23	17.24	18.25	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	46.83	16	\$1,864.95	5%	15%	\$3,395.33	11.77	12.46	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.39	9	\$0.65	15%	25%	\$33.52	51.10	54.29	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	103.60	8	\$56.85	15%	25%	\$74.19	27.16	28.85	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	129.54	7	\$3,486.31	15%	30%	\$4,033.23	50.94	54.12	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	928.11	12	\$50.74	0%	0%	\$5.26	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	3,736.03	4	\$24.51	0%	0%	\$1.48	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	3,924.72	15	\$347.21	0%	0%	\$7.42	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	2,131.51	2	\$10.74	0%	0%	\$2.14	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	92.61	15	\$508.61	0%	0%	\$460.45	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1,625.43	15	\$5,552.98	0%	0%	\$286.43	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	12,326.93	15	\$305.13	5%	25%	\$2.08	785.43	785.43	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	49,366.02	15	\$539.09	0%	0%	\$0.92	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	103,718.92	10	\$449.00	0%	0%	\$0.47	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	11,024.61	16	\$153.90	5%	25%	\$1.13	198.30	198.30	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	3,964.62	15	\$135.00	0%	0%	\$2.85	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	112,484.43	16	\$105.92	0%	0%	\$0.08	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	86,591.67	10	\$521.11	0%	0%	\$0.66	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	20,508.13	8	\$18,135.52	0%	0%	\$113.34	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	21,013.34	12	\$605.15	0%	0%	\$2.77	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	412.96	8	\$15.90	0%	0%	\$4.94	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6

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Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	42.55	8	\$3.87	0%	0%	\$11.65	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	149.56	5	\$49.37	0%	0%	\$61.68	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,081.56	5	\$288.64	25%	75%	\$49.86	238.23	238.23	VEND_CTRL-Miscellaneous-SCE-17R0-50
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,600.45	18	\$8,815.42	25%	50%	\$423.38	39.84	40.22	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	142.73	15	\$335.00	0%	0%	\$70.71	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	262.42	15	\$335.00	0%	0%	\$70.71	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.89	4	\$37.32	10%	50%	\$1,269.25	16.43	13.63	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$0.97	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.97	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$0.97	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$8.11	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,885.28	18	\$4,231.40	0%	0%	\$83.71	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.75	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	115.06	7	\$423.28	0%	0%	\$537.79	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$537.79	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$537.79	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	18,077.65	15	\$1,114.41	0%	0%	\$5.32	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$5.32	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,642.20	6	\$37.07	1%	3%	\$1.64	6.76	6.76	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.12	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.24	0%	0%	\$123.91	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	0.99	25	\$4.24	0%	0%	\$123.91	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.14	25	\$4.24	0%	0%	\$123.91	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.24	0%	0%	\$123.91	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$123.91	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.24	0%	0%	\$123.91	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.10	3	\$0.17	3%	11%	\$42.57	8.46	8.70	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.17	3%	11%	\$42.57	2.34	2.36	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.17	3%	11%	\$42.57	6.28	6.38	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.17	3%	11%	\$42.57	1.83	1.88	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.17	3%	11%	\$42.57	17.80	19.05	COM_SEM-Lighting-AEG-1

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Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.17	3%	11%	\$42.57	4.13	4.39	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.69	3	\$0.17	3%	11%	\$42.57	151.89	151.89	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.17	3%	11%	\$42.57	2.20	1.83	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.14	3	\$0.19	0%	0%	\$25.49	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.29	3	\$0.19	0%	0%	\$25.49	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.19	0%	0%	\$25.49	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.19	0%	0%	\$25.49	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.19	0%	0%	\$25.49	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.19	0%	0%	\$25.49	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.60	3	\$0.19	0%	0%	\$25.49	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.14	3	\$0.06	11%	73%	\$8.09	90.82	93.33	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.29	3	\$0.06	11%	73%	\$8.09	25.11	25.30	COM_RCX-HVAC-AEG-1

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Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.06	11%	73%	\$8.09	67.43	68.43	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.06	11%	73%	\$8.09	6.55	6.72	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.06	11%	73%	\$8.09	159.21	170.36	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.06	11%	73%	\$8.09	36.93	39.24	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.60	3	\$0.06	11%	73%	\$8.09	2,716.53	2,716.53	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$140.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	4.93	10	\$1.12	0%	0%	\$24.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.28	3	\$0.24	0%	0%	\$54.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	2.40	10	\$3.24	0%	0%	\$146.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.48	10	\$0.70	0%	0%	\$159.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	Existing	196.52	16	\$75.53	20%	75%	\$31.06	4.40	4.40	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	5,102.67	25	\$8,436.35	0%	0%	\$111.17	0.00	0.00	WHP Analysis

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Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$175.87	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.27	45	\$0.84	15%	50%	\$175.87	5.65	5.65	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$175.87	0.29	0.29	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.07	20	\$0.86	15%	50%	\$723.35	11.22	11.23	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	50%	\$723.35	0.32	0.32	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$723.35	0.92	0.92	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.81	45%	50%	\$9,999.00	3.40	3.41	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.18	20	\$0.81	45%	50%	\$9,999.00	-0.54	-0.54	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.81	45%	50%	\$9,999.00	-1.53	-1.53	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$316.78	-0.24	-0.24	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.27	45	\$1.70	15%	50%	\$316.78	1.08	1.08	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$316.78	3.07	3.07	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	12.93	18	\$0.59	15%	50%	\$1.78	4.08	4.09	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	10.61	18	\$0.59	15%	50%	\$1.78	0.44	0.44	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.54	18	\$0.59	15%	50%	\$1.78	1.24	1.24	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.89	30	\$37.07	66%	66%	\$120.86	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	14.70	30	\$37.07	66%	66%	\$120.86	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.23	30	\$37.07	66%	66%	\$120.86	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,855.12	10	\$914.46	15%	75%	\$25.83	2.46	2.46	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	154.00	15	\$248.07	15%	75%	\$135.05	16.98	16.98	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	560.81	15	\$263.92	15%	75%	\$39.46	6.18	6.18	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	18.83	15	\$248.07	15%	75%	\$1,104.47	0.21	0.21	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	16,230.29	10	\$1,796.53	15%	75%	\$12.05	1.04	1.04	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	73.39	5	\$267.96	18%	75%	\$686.10	7.91	7.94	AEG-BEST

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Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.15	15	\$0.05	10%	15%	\$29.23	2.11	2.12	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.50	14	\$5.25	6%	75%	\$101.93	6.84	6.84	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	18	\$0.26	15%	20%	\$188.33	5.94	5.94	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	868.35	15	\$189.00	19%	25%	\$18.25	2.04	2.04	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	312.91	15	\$1,273.23	19%	50%	\$341.14	4.05	4.05	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.06	15	\$0.02	19%	50%	\$20.61	14.25	14.25	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	9%	25%	\$3,139.66	0.72	0.72	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.91	15	\$0.76	3%	8%	\$56.19	1.81	1.81	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.22	15	\$0.76	3%	8%	\$56.19	8.75	8.75	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,603.57	15	\$7,501.21	15%	15%	\$68.82	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,543.44	15	\$7,501.21	15%	15%	\$68.82	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	5.03	3	\$33.20	15%	45%	\$1,949.67	0.11	0.11	RTU_MNT-Cooling-PGE-R2-1

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Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	New	110.95	15	\$410.87	15%	45%	\$313.63	14.27	14.31	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	107.18	15	\$698.92	15%	75%	\$552.30	32.09	32.15	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	231.08	20	\$1,958.49	15%	25%	\$206.89	0.49	0.49	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	450.35	20	\$1,958.49	15%	25%	\$206.89	2.13	2.13	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.20	5	\$0.75	30%	40%	\$182.85	2.90	2.90	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.49	5	\$0.75	30%	40%	\$182.85	0.92	0.92	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.07	5	\$0.75	30%	40%	\$182.85	2.61	2.61	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	107.40	10	\$8.63	25%	65%	\$8.75	1.39	1.39	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	118.01	10	\$17.56	25%	65%	\$16.20	0.77	0.77	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	29.24	10	\$16.82	25%	65%	\$62.64	0.22	0.22	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$6.40	1.58	1.58	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	413.14	15	\$15.38	1%	75%	\$3.12	5.92	5.92	AEG-BEST

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	440.18	4	\$75.87	25%	40%	\$39.00	1.21	1.21	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	0.54	0.54	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.39	8.41	8.41	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.36	13%	38%	\$523.38	48.42	48.64	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.08	15	\$0.60	13%	38%	\$616.84	67.79	68.09	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	546.76	15	\$56.14	1%	3%	\$8.79	1.08	1.10	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.03	15	\$65.99	1%	3%	\$106.49	0.06	0.06	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	423.45	11	\$26.48	15%	30%	\$6.41	3.93	3.98	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	43.36	16	\$1,864.95	5%	15%	\$3,492.71	3.22	3.26	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.20	9	\$0.65	15%	25%	\$34.87	10.14	10.32	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	95.46	8	\$56.85	15%	25%	\$77.19	4.96	5.05	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	119.36	7	\$3,486.31	15%	30%	\$4,196.06	8.44	8.60	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	835.30	12	\$50.74	0%	0%	\$5.84	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	3,362.42	4	\$24.51	0%	0%	\$1.65	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	3,532.25	15	\$347.21	0%	0%	\$8.24	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	1,918.36	2	\$10.74	0%	0%	\$2.37	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	83.35	15	\$508.61	0%	0%	\$511.61	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1,462.89	15	\$5,552.98	0%	0%	\$318.25	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	11,094.24	15	\$305.13	5%	25%	\$2.31	189.81	189.81	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	44,429.42	15	\$539.09	0%	0%	\$1.02	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	93,347.03	10	\$449.00	0%	0%	\$0.52	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	9,922.15	16	\$153.90	5%	25%	\$1.25	49.08	49.08	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	3,568.15	15	\$135.00	0%	0%	\$3.17	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	101,235.99	16	\$105.92	0%	0%	\$0.08	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	77,932.51	10	\$521.11	0%	0%	\$0.73	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	659.19	8	\$215.90	0%	0%	\$41.98	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	18,912.01	12	\$5,648.09	0%	0%	\$28.74	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	371.66	8	\$15.90	0%	0%	\$5.48	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	38.30	8	\$3.87	0%	0%	\$12.95	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	134.60	5	\$49.37	0%	0%	\$68.54	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	973.41	5	\$288.64	25%	75%	\$55.41	27.49	27.49	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,220.22	18	\$8,815.42	25%	50%	\$547.98	14.11	14.11	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	112.15	15	\$335.00	0%	0%	\$86.48	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	212.62	15	\$335.00	0%	0%	\$86.48	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	5.63	4	\$37.32	10%	50%	\$1,355.96	1.58	1.34	SMARTSTRIP-Electronics-RTF-v3.2-1

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Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.91	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.91	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$0.91	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$3.35	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,962.21	18	\$4,231.40	0%	0%	\$108.35	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.05	0%	0%	\$3,039.70	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	109.97	7	\$423.28	0%	0%	\$546.75	0.00	0.00	CW-Water Heating-RTF-v5.1-12

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Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$546.75	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$546.75	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	17,278.86	15	\$1,114.41	0%	0%	\$5.41	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$5.41	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,642.20	6	\$37.07	1%	3%	\$1.64	1.80	1.80	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.11	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.41	25	\$4.24	10%	15%	\$120.79	7.12	7.13	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	1.00	25	\$4.24	10%	15%	\$120.79	2.25	2.25	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.14	25	\$4.24	10%	15%	\$120.79	6.41	6.41	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.10	25	\$4.24	10%	15%	\$120.79	2.38	2.38	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	15%	\$120.79	91.49	91.94	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.24	10%	15%	\$120.79	15.93	16.05	ADVNC-AII-RSRCH-1

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Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.06	3	\$0.12	3%	11%	\$35.53	0.45	0.45	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.12	3%	11%	\$35.53	0.14	0.14	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.12	3%	11%	\$35.53	0.40	0.40	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.12	3%	11%	\$35.53	0.15	0.15	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.12	3%	11%	\$35.53	1.43	1.46	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.12	3%	11%	\$35.53	0.33	0.34	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.62	3	\$0.12	3%	11%	\$35.53	11.17	11.17	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.12	3%	11%	\$35.53	0.16	0.14	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.09	3	\$0.11	11%	73%	\$16.46	28.39	28.44	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.21	3	\$0.11	11%	73%	\$16.46	8.97	8.97	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.03	3	\$0.11	11%	73%	\$16.46	25.56	25.56	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.01	3	\$0.11	11%	73%	\$16.46	3.17	3.17	COM_CX-Water Heating-AEG-1

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.10	3	\$0.11	11%	73%	\$16.46	304.01	306.45	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.11	11%	73%	\$16.46	52.94	53.51	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.44	3	\$0.11	11%	73%	\$16.46	3,523.69	3,523.69	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.09	3	\$0.03	0%	0%	\$5.22	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.21	3	\$0.03	0%	0%	\$5.22	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.03	0%	0%	\$5.22	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.03	0%	0%	\$5.22	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.03	0%	0%	\$5.22	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.03	0%	0%	\$5.22	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.44	3	\$0.03	0%	0%	\$5.22	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$146.88	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	4.44	10	\$1.12	0%	0%	\$27.53	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.15	3	\$0.24	0%	0%	\$60.40	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	2.16	10	\$3.24	0%	0%	\$163.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.43	10	\$0.70	0%	0%	\$177.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	New	196.52	16	\$75.53	20%	75%	\$31.06	1.13	1.13	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	5,382.63	25	\$8,280.97	0%	0%	\$100.56	0.00	0.00	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	2.71	45	\$0.84	15%	35%	\$10.37	695.36	720.86	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.21	45	\$0.84	15%	35%	\$10.37	27.31	27.66	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	1.85	45	\$0.84	15%	35%	\$10.37	473.47	495.52	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	1.06	20	\$0.86	15%	35%	\$57.05	271.13	281.07	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.86	15%	35%	\$57.05	1.16	1.17	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.08	20	\$0.86	15%	35%	\$57.05	20.02	20.96	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	3.62	20	\$0.81	45%	50%	\$26.95	231.79	240.29	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.14	20	\$0.81	45%	50%	\$26.95	-4.55	-4.61	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-1.24	20	\$0.81	45%	50%	\$26.95	-78.91	-82.59	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$1.70	15%	35%	\$6.83	10.66	11.05	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.46	45	\$1.70	15%	35%	\$6.83	36.42	36.88	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	13.02	45	\$1.70	15%	35%	\$6.83	631.29	660.69	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	34.11	18	\$0.59	15%	50%	\$0.88	153.00	158.61	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	1.95	18	\$0.59	15%	50%	\$0.88	4.49	4.55	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	17.40	18	\$0.59	15%	50%	\$0.88	77.82	81.45	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	71.47	30	\$37.07	48%	48%	\$16.87	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	11.46	30	\$37.07	48%	48%	\$16.87	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	58.86	30	\$37.07	48%	48%	\$16.87	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	18,491.44	10	\$914.46	15%	75%	\$5.65	201.27	212.92	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	738.69	15	\$248.07	15%	75%	\$29.53	1,118.15	1,182.88	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	2,689.96	15	\$263.92	15%	75%	\$8.63	407.18	430.75	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	80,882.77	10	\$1,796.53	15%	75%	\$2.60	320.06	350.69	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	380.16	5	\$267.96	18%	75%	\$136.00	1,688.35	1,753.92	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	3.62	15	\$0.05	5%	15%	\$1.23	502.45	531.15	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.07	14	\$5.25	3%	75%	\$6,640.25	108.44	110.50	RES_HRV-Cooling-7PLN-v1-2

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Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	4.95	18	\$0.26	15%	20%	\$4.18	316.47	331.20	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	36,319.43	15	\$189.00	0%	0%	\$0.46	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	13,087.78	15	\$1,273.23	0%	0%	\$8.68	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	3.04	15	\$0.02	13%	50%	\$0.52	1,542.88	1,655.78	FAN_VSD-Ventilation-MIDATL-v3.0-13
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.29	15	\$0.23	9%	25%	\$69.70	64.50	69.22	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.62	15	\$0.76	3%	8%	\$35.62	23.30	23.75	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.26	15	\$0.76	3%	8%	\$35.62	91.98	98.71	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	39,632.17	15	\$7,501.21	15%	15%	\$14.43	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	5,877.62	15	\$7,501.21	15%	15%	\$14.43	0.00	0.00	HVLS-Heating-AEG-1
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	18.38	18.98	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	Existing	597.43	15	\$410.87	15%	45%	\$59.13	1,165.41	1,187.26	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	577.11	15	\$698.92	15%	75%	\$104.13	2,175.23	2,206.05	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	921.88	20	\$391.70	15%	25%	\$30.10	31.60	33.24	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	66.46	20	\$391.70	15%	25%	\$30.10	22.18	22.18	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	5.03	5	\$0.75	30%	40%	\$16.72	644.62	668.26	STAT_WIFI-All-7PLN-v2-1

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Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	30%	40%	\$16.72	25.32	25.64	STAT_WIFI-AII-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	3.44	5	\$0.75	30%	40%	\$16.72	438.92	459.36	STAT_WIFI-AII-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	187.89	10	\$8.63	25%	65%	\$5.15	6.08	6.26	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	206.46	10	\$17.56	25%	65%	\$9.53	3.34	3.44	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	51.16	10	\$16.82	25%	65%	\$36.85	0.82	0.84	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$6.29	3.69	3.74	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	722.75	15	\$15.38	16%	75%	\$1.84	14.24	14.60	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	770.07	4	\$75.87	25%	40%	\$22.94	9.23	9.46	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	7.74	7.94	DHW_STBK-Water Heating-ILTRM-v4.0-4
Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.76	24.65	25.27	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.89	15	\$0.36	3%	23%	\$36.18	323.71	337.27	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.24	15	\$0.60	3%	23%	\$42.64	453.19	472.18	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	2,122.27	15	\$56.14	1%	3%	\$2.42	9.18	10.15	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.59	15	\$65.99	1%	3%	\$114.91	0.60	0.66	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,347.79	11	\$26.48	15%	30%	\$0.45	133.45	141.99	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	650.00	16	\$1,864.95	5%	15%	\$245.07	91.10	96.93	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.70	9	\$0.65	15%	25%	\$30.42	85.70	92.36	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	98.10	8	\$56.85	15%	25%	\$80.19	45.55	49.09	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	122.67	7	\$3,486.31	15%	30%	\$4,359.43	85.43	92.08	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	30.89	12	\$50.74	0%	0%	\$165.23	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	8.27	4	\$24.51	0%	0%	\$778.02	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	32.55	15	\$347.21	0%	0%	\$973.50	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	40.91	2	\$10.74	0%	0%	\$171.80	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.77	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.48	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	102.25	15	\$305.13	0%	0%	\$272.39	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

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Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	409.48	15	\$539.09	0%	0%	\$120.17	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	860.33	10	\$449.00	0%	0%	\$61.87	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	71.53	16	\$153.90	0%	0%	\$194.04	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	25.72	15	\$135.00	0%	0%	\$491.05	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	241.94	16	\$105.92	0%	0%	\$42.15	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	186.25	10	\$521.11	0%	0%	\$362.94	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	131.20	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	174.30	12	\$605.15	0%	0%	\$363.72	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	13.79	8	\$15.90	0%	0%	\$154.86	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.42	8	\$3.87	0%	0%	\$365.68	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	5.00	5	\$49.37	0%	0%	\$1,934.94	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,757.06	5	\$288.64	25%	75%	\$32.26	0.39	0.41	VEND_CTRL-Miscellaneous-SCE-17R0-42

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	58,475.12	18	\$8,815.42	25%	50%	\$12.17	751.99	787.01	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	2,237.13	15	\$335.00	0%	0%	\$12.38	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	156.08	15	\$335.00	0%	0%	\$12.38	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	2,454.96	4	\$37.32	10%	50%	\$2.81	4,399.92	3,321.41	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	13.56	5	\$1.03	20%	75%	\$14.38	13,941.59	13,983.47	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.10	8	\$0.93	10%	35%	\$36.06	32.41	33.97	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.93	10%	35%	\$36.06	20.49	21.75	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	3.22	8	\$0.93	10%	35%	\$36.06	1,503.86	1,508.38	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	1.09	6	\$0.18	10%	15%	\$27.00	101.57	101.87	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	141,954.98	18	\$4,231.40	0%	0%	\$2.41	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

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Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.79	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	192.39	7	\$423.28	0%	0%	\$321.62	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$321.62	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	\$321.62	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	30,228.33	15	\$1,114.41	0%	0%	\$3.18	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$3.18	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	240,579.66	6	\$37.07	1%	3%	\$0.02	250.37	250.37	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.83	20	\$8.09	0%	0%	\$718.11	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	6.20	25	\$4.24	0%	0%	\$20.95	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.56	25	\$4.24	0%	0%	\$20.95	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	4.82	25	\$4.24	0%	0%	\$20.95	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.24	0%	0%	\$20.95	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.88	25	\$4.24	0%	0%	\$20.95	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.24	0%	0%	\$20.95	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	Existing	1.57	3	\$4.99	0%	0%	\$207.59	0.00	0.00	COM_SEM-HVAC-AEG-1

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Data Center	Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$4.99	0%	0%	\$207.59	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	1.07	3	\$4.99	0%	0%	\$207.59	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$4.99	0%	0%	\$207.59	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.32	3	\$4.99	0%	0%	\$207.59	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$4.99	0%	0%	\$207.59	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$4.99	0%	0%	\$207.59	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	3.29	3	\$4.99	0%	0%	\$207.59	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	Existing	2.17	3	\$9.65	0%	0%	\$696.50	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	Existing	0.17	3	\$9.65	0%	0%	\$696.50	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	Existing	1.48	3	\$9.65	0%	0%	\$696.50	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	Existing	0.01	3	\$9.65	0%	0%	\$696.50	0.00	0.00	COM_CX-Water Heating-AEG-1
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.37	3	\$9.65	0%	0%	\$696.50	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.07	3	\$9.65	0%	0%	\$696.50	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$9.65	0%	0%	\$696.50	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	Existing	2.17	3	\$3.06	2%	65%	\$221.07	1,899.27	2,007.76	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	Existing	0.17	3	\$3.06	2%	65%	\$221.07	74.60	76.02	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	Existing	1.48	3	\$3.06	2%	65%	\$221.07	1,293.22	1,387.85	COM_RCX-HVAC-AEG-1

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Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$3.06	2%	65%	\$221.07	5.36	5.49	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.37	3	\$3.06	2%	65%	\$221.07	310.17	339.36	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$3.06	2%	65%	\$221.07	62.94	67.84	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$3.06	2%	65%	\$221.07	1.39	1.49	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.26	10	\$0.09	0%	0%	\$40.49	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Miscellaneous	LED Signage	perBldg	Existing	106.71	16	\$75.53	20%	75%	\$57.20	1.34	1.34	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	328,513.08	25	\$543,136.96	0%	75%	\$111.17	2,136.87	2,149.18	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$272.68	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.15	45	\$0.84	15%	50%	\$272.68	16.40	16.42	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$0.84	15%	50%	\$272.68	5.60	5.60	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	1.04	20	\$0.86	15%	50%	\$55.52	235.71	236.02	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.86	15%	50%	\$55.52	0.94	0.94	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.08	20	\$0.86	15%	50%	\$55.52	17.72	17.72	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	2.22	20	\$0.81	45%	50%	\$47.68	71.53	71.63	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.10	20	\$0.81	45%	50%	\$47.68	-1.56	-1.56	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.89	20	\$0.81	45%	50%	\$47.68	-29.47	-29.46	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.12	45	\$1.70	15%	50%	\$69.28	-5.09	-5.10	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.15	45	\$1.70	15%	50%	\$69.28	3.13	3.14	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	1.34	45	\$1.70	15%	50%	\$69.28	59.08	59.07	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	39.15	18	\$0.59	15%	35%	\$0.88	49.03	49.10	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	1.19	18	\$0.59	15%	35%	\$0.88	0.72	0.72	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	10.58	18	\$0.59	15%	35%	\$0.88	13.65	13.65	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	43.78	30	\$37.07	66%	66%	\$24.21	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	8.22	30	\$37.07	66%	66%	\$24.21	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	42.21	30	\$37.07	66%	66%	\$24.21	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,110.05	10	\$914.46	15%	75%	\$8.96	28.36	28.36	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	443.82	15	\$248.07	15%	75%	\$46.86	195.76	195.76	AEG-BEST

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Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,616.18	15	\$263.92	15%	75%	\$13.69	71.29	71.29	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	44,505.19	10	\$1,796.53	15%	75%	\$4.40	43.30	43.30	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	223.38	5	\$267.96	18%	75%	\$225.73	132.43	133.11	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	New	2.22	15	\$0.05	10%	15%	\$1.93	44.43	44.56	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.05	14	\$5.25	6%	75%	\$9,160.68	19.87	19.92	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	3.53	18	\$0.26	15%	20%	\$5.51	113.89	113.87	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	29,655.02	15	\$189.00	0%	0%	\$0.53	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	10,686.25	15	\$1,273.23	0%	0%	\$9.98	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	2.17	15	\$0.02	19%	50%	\$0.60	273.23	273.13	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.21	15	\$0.23	9%	25%	\$91.87	13.71	13.71	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.51	15	\$0.76	3%	8%	\$60.19	5.25	5.26	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.55	15	\$0.76	3%	8%	\$60.19	12.07	12.07	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	24,277.45	15	\$7,501.21	15%	15%	\$22.21	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	4,217.14	15	\$7,501.21	15%	15%	\$22.21	0.00	0.00	HVLS-Heating-AEG-1

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Data Center	Cooling	RTU - Maintenance	tonCool	New	5.03	3	\$33.20	15%	45%	\$1,949.67	0.74	0.75	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	New	347.79	15	\$410.87	15%	45%	\$100.05	304.08	304.87	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	335.96	15	\$698.92	15%	75%	\$176.19	683.68	684.90	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	736.16	20	\$391.70	15%	25%	\$35.70	9.29	9.29	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	53.54	20	\$391.70	15%	25%	\$35.70	5.99	5.99	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	3.08	5	\$0.75	30%	40%	\$24.23	60.87	61.04	STAT_WIFI-All-7PLN-v2-1
Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.28	5	\$0.75	30%	40%	\$24.23	2.66	2.66	STAT_WIFI-All-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	2.46	5	\$0.75	30%	40%	\$24.23	50.15	50.13	STAT_WIFI-All-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	179.59	10	\$8.63	25%	65%	\$5.23	1.12	1.12	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	197.34	10	\$17.56	25%	65%	\$9.69	0.62	0.62	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	48.90	10	\$16.82	25%	65%	\$37.46	0.18	0.18	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$6.40	1.27	1.27	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	690.82	15	\$15.38	1%	75%	\$1.87	4.76	4.76	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	736.04	4	\$75.87	25%	40%	\$23.32	0.97	0.97	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	0.43	0.43	DHW_STBK-Water Heating-ILTRM-v4.0-4

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Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.39	6.76	6.76	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.82	15	\$0.36	11%	23%	\$37.54	168.32	171.00	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.14	15	\$0.60	11%	23%	\$44.25	235.65	239.39	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	1,952.82	15	\$56.14	1%	3%	\$2.51	2.08	2.17	CLTG_EXITLEC-Interior Lighting-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.23	15	\$65.99	1%	3%	\$108.37	0.14	0.14	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	5,877.02	11	\$26.48	15%	30%	\$0.46	30.39	30.94	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	601.80	16	\$1,864.95	5%	15%	\$252.21	24.94	25.36	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.47	9	\$0.65	15%	25%	\$31.75	17.01	17.42	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	89.90	8	\$56.85	15%	25%	\$83.72	8.31	8.52	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	112.41	7	\$3,486.31	15%	30%	\$4,551.18	14.15	14.52	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	29.09	12	\$50.74	0%	0%	\$167.86	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	7.55	4	\$24.51	0%	0%	\$813.59	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	30.25	15	\$347.21	0%	0%	\$999.33	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	34.62	2	\$10.74	0%	0%	\$199.02	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.71	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.53	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	95.00	15	\$305.13	0%	0%	\$279.61	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	380.47	15	\$539.09	0%	0%	\$123.36	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	799.37	10	\$449.00	0%	0%	\$63.51	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	65.87	16	\$153.90	0%	0%	\$200.73	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	23.69	15	\$135.00	0%	0%	\$507.97	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	219.05	16	\$105.92	0%	0%	\$44.42	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	168.63	10	\$521.11	0%	0%	\$382.51	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	3.97	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	161.95	12	\$5,648.09	0%	0%	\$3,484.80	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	12.94	8	\$15.90	0%	0%	\$157.50	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.33	8	\$3.87	0%	0%	\$371.91	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	4.69	5	\$49.37	0%	0%	\$1,968.31	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,640.50	5	\$288.64	25%	75%	\$32.88	0.05	0.05	VEND_CTRL-Miscellaneous-SCE-17R0-41
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	41,671.34	18	\$8,815.42	25%	50%	\$16.03	270.63	270.58	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	1,786.45	15	\$335.00	0%	0%	\$14.68	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	126.56	15	\$335.00	0%	0%	\$14.68	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	2,309.21	4	\$37.32	10%	50%	\$3.14	400.25	314.43	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	13.33	5	\$0.98	20%	75%	\$13.70	2,535.33	2,535.33	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.06	8	\$0.82	10%	35%	\$32.08	5.65	5.66	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.82	10%	35%	\$32.08	4.32	4.32	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	3.16	8	\$0.82	10%	35%	\$32.08	379.59	379.59	com-datacenters-7p_v5p.xlsx

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Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	1.07	6	\$0.13	10%	15%	\$19.78	21.18	21.18	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	101,161.91	18	\$4,231.40	0%	0%	\$3.17	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.09	0%	0%	\$3,039.70	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	183.89	7	\$423.28	0%	0%	\$326.98	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$326.98	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	\$326.98	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	28,892.65	15	\$1,114.41	0%	0%	\$3.23	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$3.23	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	240,579.66	6	\$37.07	1%	3%	\$0.02	66.85	66.85	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.81	20	\$7.28	0%	0%	\$649.59	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	New	6.20	25	\$4.24	10%	15%	\$19.72	149.65	149.81	ADVNC-All-RSRCH-1

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Data Center	Heating	Advanced New Construction Designs	sqft	New	0.56	25	\$4.24	10%	15%	\$19.72	6.54	6.54	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	4.96	25	\$4.24	10%	15%	\$19.72	123.29	123.27	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.17	25	\$4.24	10%	15%	\$19.72	1.92	1.92	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	1.90	25	\$4.24	10%	15%	\$19.72	176.35	179.22	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.38	25	\$4.24	10%	15%	\$19.72	26.71	26.96	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	New	0.96	3	\$3.32	0%	0%	\$167.38	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Heating	Strategic Energy Management	sqft	New	0.09	3	\$3.32	0%	0%	\$167.38	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.77	3	\$3.32	0%	0%	\$167.38	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$3.32	0%	0%	\$167.38	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.29	3	\$3.32	0%	0%	\$167.38	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$3.32	0%	0%	\$167.38	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$3.32	0%	0%	\$167.38	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	New	3.10	3	\$3.32	0%	0%	\$167.38	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	New	1.33	3	\$4.43	2%	65%	\$445.00	606.38	607.52	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	New	0.12	3	\$4.43	2%	65%	\$445.00	26.48	26.52	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	New	1.06	3	\$4.43	2%	65%	\$445.00	499.56	499.44	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	New	0.01	3	\$4.43	2%	65%	\$445.00	2.59	2.59	COM_CX-Water Heating-AEG-1

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Data Center	Interior Lighting	Commissioning	sqft	New	0.34	3	\$4.43	2%	65%	\$445.00	595.44	609.88	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$4.43	2%	65%	\$445.00	90.20	91.47	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$4.43	2%	65%	\$445.00	0.25	0.25	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	New	1.33	3	\$1.41	0%	0%	\$141.24	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	New	0.12	3	\$1.41	0%	0%	\$141.24	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	New	1.06	3	\$1.41	0%	0%	\$141.24	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$1.41	0%	0%	\$141.24	0.00	0.00	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.34	3	\$1.41	0%	0%	\$141.24	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$1.41	0%	0%	\$141.24	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$1.41	0%	0%	\$141.24	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.24	10	\$0.09	0%	0%	\$42.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.00	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Miscellaneous	LED Signage	perBldg	New	106.71	16	\$75.53	20%	75%	\$57.20	0.34	0.34	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	345,710.51	25	\$531,862.32	0%	75%	\$100.56	1,089.51	1,089.51	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$0.84	15%	35%	\$110.16	1,744.33	1,799.44	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.27	45	\$0.84	15%	35%	\$110.16	1,535.72	1,550.05	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$110.16	438.70	443.84	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.29	20	\$0.86	15%	50%	\$225.22	1,603.85	1,654.52	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$225.22	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$225.22	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.31	20	\$0.81	45%	50%	\$659.19	991.63	1,022.96	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.81	45%	50%	\$659.19	-255.95	-258.34	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.81	45%	50%	\$659.19	-128.93	-130.44	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.01	45	\$1.70	15%	35%	\$303.04	-243.76	-251.46	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.28	45	\$1.70	15%	35%	\$303.04	2,047.62	2,066.74	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.05	45	\$1.70	15%	35%	\$303.04	1,031.43	1,043.51	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.72	18	\$0.59	15%	50%	\$9,999.00	346.25	357.19	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.37	18	\$0.59	15%	50%	\$9,999.00	-134.27	-135.53	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.44	18	\$0.59	15%	50%	\$9,999.00	-67.64	-68.43	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.16	30	\$37.07	48%	48%	\$102.35	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	14.94	30	\$37.07	48%	48%	\$102.35	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.58	30	\$37.07	48%	48%	\$102.35	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	1,588.56	10	\$914.46	15%	75%	\$65.61	348.45	367.76	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	161.53	15	\$248.07	15%	75%	\$134.79	4,927.32	5,200.50	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	377.15	15	\$263.92	15%	75%	\$61.42	1,150.46	1,214.25	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	11,943.40	10	\$1,796.53	15%	75%	\$17.61	849.46	931.03	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	55.44	5	\$267.96	18%	75%	\$929.60	8,067.57	8,350.72	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.31	15	\$0.05	5%	15%	\$14.23	2,176.52	2,283.26	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.05	14	\$5.25	3%	75%	\$152.43	6,173.53	6,263.25	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.13	18	\$0.26	15%	20%	\$148.31	517.06	523.11	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	460.86	15	\$189.00	0%	0%	\$34.94	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	166.07	15	\$1,273.23	0%	0%	\$653.21	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.08	15	\$0.04	13%	25%	\$39.46	812.01	826.81	FAN_VSD-Ventilation-MIDATL-v3.0-13
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	21%	47%	\$2,472.48	174.97	178.15	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.81	15	\$0.76	7%	16%	\$58.94	2,175.38	2,207.00	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.29	15	\$0.76	7%	16%	\$58.94	2,140.63	2,179.62	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,414.51	15	\$7,501.21	15%	15%	\$58.01	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,667.30	15	\$7,501.21	15%	15%	\$58.01	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,152.26	715.00	738.77	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	Existing	86.58	15	\$410.87	15%	45%	\$407.99	6,479.66	6,601.79	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	83.64	15	\$698.92	15%	75%	\$718.47	12,027.58	12,199.10	RTU_PREC-Cooling-XCELCO-2017-18-1
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	130.87	20	\$685.47	15%	25%	\$187.72	271.06	298.17	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	144.90	20	\$685.47	15%	25%	\$187.72	1,037.30	1,037.30	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.43	5	\$0.75	30%	40%	\$140.19	2,757.83	2,844.95	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.50	5	\$0.75	30%	40%	\$140.19	1,423.66	1,436.95	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.09	5	\$0.75	30%	40%	\$140.19	717.12	725.52	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	55.00	10	\$8.63	25%	65%	\$17.58	794.06	817.08	DHW_AER-Water Heating-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	60.44	10	\$17.56	25%	65%	\$32.55	436.26	448.91	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	14.98	10	\$16.82	25%	65%	\$125.87	106.43	109.13	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$6.29	474.14	481.41	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	211.53	15	\$15.38	16%	75%	\$6.27	1,854.11	1,901.25	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	225.42	4	\$75.87	25%	40%	\$78.37	1,201.54	1,232.09	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$21.90	1,008.29	1,033.93	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kWh	Existing	12.95	20	\$258.33	1%	30%	\$1,477.46	3,211.08	3,292.71	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.33	15	\$0.36	3%	23%	\$96.38	6,832.56	7,096.08	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.46	15	\$0.60	3%	23%	\$113.59	9,565.58	9,934.51	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	156.49	15	\$56.14	1%	3%	\$33.16	255.31	282.82	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.62	15	\$65.99	1%	3%	\$115.91	10.13	11.23	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,378.77	11	\$26.48	15%	30%	\$1.20	2,862.08	3,027.01	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	243.58	16	\$1,864.95	5%	15%	\$652.59	1,953.82	2,066.41	CLTG_BILVL-Interior Lighting-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.46	9	\$0.65	15%	25%	\$33.87	2,553.44	2,805.21	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	100.72	8	\$56.85	15%	25%	\$79.22	1,357.17	1,490.99	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	125.93	7	\$3,486.31	15%	30%	\$4,306.52	2,545.51	2,796.50	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	24.69	12	\$50.74	0%	0%	\$206.76	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	11.63	4	\$24.51	0%	0%	\$654.83	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.64	15	\$347.21	0%	0%	\$1,216.92	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	32.69	2	\$10.74	0%	0%	\$214.97	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.65	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	11.45	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	86.83	15	\$305.13	0%	0%	\$340.50	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	347.72	15	\$539.09	0%	0%	\$150.22	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	730.56	10	\$449.00	0%	0%	\$77.34	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	62.00	16	\$153.90	0%	0%	\$264.80	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	22.30	15	\$135.00	0%	0%	\$670.12	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	344.77	16	\$105.92	0%	0%	\$34.77	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	265.41	10	\$521.11	0%	0%	\$299.37	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	104.85	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	148.01	12	\$605.15	0%	0%	\$454.67	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	11.02	8	\$15.90	0%	0%	\$193.78	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.14	8	\$3.87	0%	0%	\$457.58	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.99	5	\$49.37	0%	0%	\$2,421.23	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,463.00	5	\$288.64	25%	75%	\$38.75	839.41	868.89	VEND_CTRL-Miscellaneous-SCE-17R0-47
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,574.60	18	\$8,815.42	25%	50%	\$431.54	1,228.63	1,243.02	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	181.48	15	\$335.00	0%	0%	\$79.67	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	189.81	15	\$335.00	0%	0%	\$79.67	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.36	4	\$37.32	10%	50%	\$614.83	1,067.50	904.76	SMARTSTRIP-Electronics-RTF-v3.2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$14.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$9.65	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	573.38	18	\$4,231.40	0%	5%	\$568.84	148.18	149.91	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	62.48	10	\$19.59	15%	75%	\$35.25	7.66	7.72	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	28.24	5	\$18,906.62	15%	75%	\$9,999.00	0.97	0.98	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.19	0%	0%	\$3,342.79	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	56.32	7	\$423.28	0%	0%	\$1,077.72	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.55	7	\$423.28	0%	0%	\$1,077.72	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.55	7	\$423.28	0%	0%	\$1,077.72	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	8,848.65	15	\$1,114.41	0%	5%	\$10.83	1,310.16	1,343.46	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	29.01	15	\$1,114.41	0%	5%	\$10.83	0.79	0.82	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,032.11	6	\$37.07	1%	3%	\$5.77	400.67	400.67	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.20	0%	5%	\$718.11	53.19	53.79	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.64	25	\$4.24	0%	0%	\$96.50	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.24	0%	0%	\$96.50	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.24	0%	0%	\$96.50	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.33	25	\$4.24	0%	0%	\$96.50	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.93	25	\$4.24	0%	0%	\$96.50	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$96.50	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.14	3	\$0.04	5%	16%	\$22.80	1,037.47	1,088.35	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.16	3	\$0.04	5%	16%	\$22.80	535.57	543.35	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.04	5%	16%	\$22.80	269.78	274.69	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.05	3	\$0.04	5%	16%	\$22.80	263.84	270.55	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.16	3	\$0.04	5%	16%	\$22.80	1,301.72	1,424.95	COM_SEM-Lighting-AEG-1

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Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.04	5%	16%	\$22.80	283.81	311.79	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.04	5%	16%	\$22.80	61.40	70.14	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.04	5%	16%	\$22.80	196.90	166.88	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.19	3	\$0.25	0%	0%	\$107.46	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	Existing	0.22	3	\$0.25	0%	0%	\$107.46	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.25	0%	0%	\$107.46	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.25	0%	0%	\$107.46	0.00	0.00	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.18	3	\$0.25	0%	0%	\$107.46	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.25	0%	0%	\$107.46	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.25	0%	0%	\$107.46	0.00	0.00	COM_CX-Refrigeration-AEG-1
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.19	3	\$0.08	10%	65%	\$34.11	7,182.52	7,534.75	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.22	3	\$0.08	10%	65%	\$34.11	3,707.80	3,761.69	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.08	10%	65%	\$34.11	1,867.69	1,901.71	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.08	10%	65%	\$34.11	608.87	624.35	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.18	3	\$0.08	10%	65%	\$34.11	7,509.95	8,220.89	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.08	10%	65%	\$34.11	1,637.34	1,798.78	COM_RCX-Lighting-AEG-1

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Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.08	10%	65%	\$34.11	708.51	809.33	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$83.13	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.12	0%	0%	\$2,500.59	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$5,484.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	Existing	139.26	16	\$75.53	20%	75%	\$43.83	663.63	663.63	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,289.36	25	\$2,131.72	0%	0%	\$111.17	0.00	0.00	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$225.23	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.21	45	\$0.84	15%	50%	\$225.23	1,082.11	1,082.33	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$225.23	39.50	39.49	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.36	20	\$0.86	15%	50%	\$136.50	1,111.86	1,113.62	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.08	20	\$0.86	15%	50%	\$136.50	104.03	104.05	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	50%	\$136.50	60.40	60.39	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.81	45%	50%	\$5,306.57	139.85	140.07	Building Energy Simulation Tool

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Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$5,306.57	-42.33	-42.34	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$5,306.57	-24.58	-24.58	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$1,016.32	-5.91	-5.92	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.08	45	\$1.70	15%	50%	\$1,016.32	307.04	307.10	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$1.70	15%	50%	\$1,016.32	178.26	178.25	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	2.11	18	\$0.59	15%	50%	\$4.56	143.18	143.41	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	6.34	18	\$0.59	15%	50%	\$4.56	184.46	184.50	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.34	18	\$0.59	15%	50%	\$4.56	107.09	107.09	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.47	30	\$37.07	66%	66%	\$132.32	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	11.37	30	\$37.07	66%	66%	\$132.32	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.38	30	\$37.07	66%	66%	\$132.32	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,192.06	10	\$914.46	15%	75%	\$83.53	67.17	67.17	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	121.21	15	\$248.07	15%	75%	\$171.59	1,179.29	1,179.29	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	283.01	15	\$263.92	15%	75%	\$78.18	275.35	275.35	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	8,034.26	10	\$1,796.53	15%	75%	\$24.35	154.42	154.42	AEG-BEST

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Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	40.21	5	\$267.96	18%	75%	\$1,255.35	852.86	857.89	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.23	15	\$0.05	10%	15%	\$18.93	247.67	248.58	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.32	14	\$5.25	6%	75%	\$197.89	1,318.15	1,318.78	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.12	18	\$0.26	15%	20%	\$167.49	232.68	232.67	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	106.17	15	\$189.00	0%	0%	\$149.21	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	38.26	15	\$1,273.23	0%	0%	\$2,789.34	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.07	15	\$0.14	19%	25%	\$168.51	101.82	101.80	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	21%	47%	\$2,792.23	46.19	46.18	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.70	15	\$0.76	7%	16%	\$66.71	571.01	571.28	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.25	15	\$0.76	7%	16%	\$66.71	565.09	564.99	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,481.39	15	\$7,501.21	15%	15%	\$75.85	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,834.51	15	\$7,501.21	15%	15%	\$75.85	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	6.21	3	\$33.20	15%	45%	\$1,577.70	39.22	39.65	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	New	62.29	15	\$410.87	15%	45%	\$558.64	2,314.44	2,320.54	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	60.17	15	\$698.92	15%	75%	\$983.76	5,193.68	5,203.04	RTU_PREC-Cooling-XCELCO-2017-18-1

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Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	93.32	20	\$685.47	15%	25%	\$237.93	84.83	84.83	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	114.07	20	\$685.47	15%	25%	\$237.93	301.75	301.75	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	30%	40%	\$181.33	336.57	337.69	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	30%	40%	\$181.33	174.85	174.92	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.08	5	\$0.75	30%	40%	\$181.33	101.52	101.50	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	52.57	10	\$8.63	25%	65%	\$17.87	160.79	160.79	DHW_AER-Water Heating-ILTRM-v4.0-1
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	57.77	10	\$17.56	25%	65%	\$33.10	88.34	88.34	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	14.31	10	\$16.82	25%	65%	\$127.97	25.21	25.21	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$6.40	180.37	180.37	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	202.18	15	\$15.38	1%	75%	\$6.38	680.48	680.48	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	215.46	4	\$75.87	25%	40%	\$79.68	139.39	139.39	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$22.26	62.24	62.24	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$1,502.08	967.29	967.29	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.30	15	\$0.36	11%	23%	\$100.25	3,915.19	3,959.32	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.43	15	\$0.60	11%	23%	\$118.15	5,481.26	5,543.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	143.82	15	\$56.14	1%	3%	\$34.45	63.54	65.75	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.93	15	\$65.99	1%	3%	\$110.04	2.52	2.61	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,202.36	11	\$26.48	15%	30%	\$1.23	716.73	724.79	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	225.52	16	\$1,864.95	5%	15%	\$671.23	587.92	594.02	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.25	9	\$0.65	15%	25%	\$35.49	555.06	579.57	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	92.03	8	\$56.85	15%	25%	\$83.00	271.12	283.42	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	115.07	7	\$3,486.31	15%	30%	\$4,512.24	461.80	483.32	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	23.24	12	\$50.74	0%	0%	\$210.04	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	10.11	4	\$24.51	0%	0%	\$724.10	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.23	15	\$347.21	0%	0%	\$1,269.69	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	27.59	2	\$10.74	0%	0%	\$249.17	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.60	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	10.45	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

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Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	79.25	15	\$305.13	0%	0%	\$355.26	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	317.37	15	\$539.09	0%	0%	\$156.73	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	666.80	10	\$449.00	0%	0%	\$80.69	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	54.42	16	\$153.90	0%	0%	\$288.79	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	19.57	15	\$135.00	0%	0%	\$730.82	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	298.19	16	\$105.92	0%	0%	\$38.73	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	229.55	10	\$521.11	0%	0%	\$333.52	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	3.16	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	135.09	12	\$5,648.09	0%	0%	\$4,427.55	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	10.34	8	\$15.90	0%	0%	\$197.09	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.07	8	\$3.87	0%	0%	\$465.38	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.75	5	\$49.37	0%	0%	\$2,462.98	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,365.95	5	\$288.64	25%	75%	\$39.48	118.21	118.21	VEND_CTRL-Miscellaneous-SCE-17R0-41
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,371.58	18	\$8,815.42	25%	50%	\$487.34	552.90	552.86	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	129.40	15	\$335.00	0%	0%	\$100.26	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	150.73	15	\$335.00	0%	0%	\$100.26	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	11.87	4	\$37.32	10%	50%	\$649.24	115.05	99.13	SMARTSTRIP-Electronics-RTF-v3.2-1
Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$13.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.72	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.72	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.72	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$5.32	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	499.45	18	\$4,231.40	0%	5%	\$642.40	66.68	66.68	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	60.15	10	\$19.59	15%	75%	\$35.46	2.73	2.73	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	New	27.85	5	\$18,906.62	15%	75%	\$9,999.00	0.14	0.14	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.17	0%	0%	\$3,188.48	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	53.83	7	\$423.28	0%	0%	\$1,095.50	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.53	7	\$423.28	0%	0%	\$1,095.50	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.53	7	\$423.28	0%	0%	\$1,095.50	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	8,457.66	15	\$1,114.41	0%	5%	\$11.01	385.32	385.32	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	26.84	15	\$1,114.41	0%	5%	\$11.01	0.23	0.23	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,032.11	6	\$37.07	1%	3%	\$5.77	118.24	118.24	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.18	0%	5%	\$649.59	16.07	16.07	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.63	25	\$4.24	10%	15%	\$93.14	818.17	819.17	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	0.77	25	\$4.24	10%	15%	\$93.14	425.04	425.11	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.16	25	\$4.24	10%	15%	\$93.14	246.77	246.76	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.33	25	\$4.24	10%	15%	\$93.14	268.88	268.88	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.93	25	\$4.24	10%	15%	\$93.14	5,273.15	5,338.76	ADVNC-AII-RSRCH-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	15%	\$93.14	854.09	868.94	ADVNC-All-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.03	16%	16%	\$18.35	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.03	16%	16%	\$18.35	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.03	16%	16%	\$18.35	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$0.03	16%	16%	\$18.35	0.00	0.00	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.03	16%	16%	\$18.35	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.03	16%	16%	\$18.35	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.03	16%	16%	\$18.35	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.03	16%	16%	\$18.35	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	New	0.14	3	\$0.16	10%	65%	\$84.48	2,908.80	2,915.36	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	New	0.16	3	\$0.16	10%	65%	\$84.48	1,511.13	1,511.56	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	New	0.03	3	\$0.16	10%	65%	\$84.48	877.34	877.25	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	New	0.02	3	\$0.16	10%	65%	\$84.48	318.65	318.65	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.17	3	\$0.16	10%	65%	\$84.48	15,622.81	15,933.13	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.16	10%	65%	\$84.48	2,530.43	2,596.02	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.16	10%	65%	\$84.48	268.59	276.26	COM_CX-Refrigeration-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.14	3	\$0.05	0%	0%	\$26.81	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.16	3	\$0.05	0%	0%	\$26.81	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.05	0%	0%	\$26.81	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.05	0%	0%	\$26.81	0.00	0.00	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.17	3	\$0.05	0%	0%	\$26.81	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.05	0%	0%	\$26.81	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.05	0%	0%	\$26.81	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$86.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.05	10	\$1.12	0%	0%	\$2,609.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$5,722.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	New	139.26	16	\$75.53	20%	75%	\$43.83	186.72	186.72	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,366.87	25	\$2,102.88	0%	0%	\$100.56	0.00	0.00	WHP Analysis

Washington Commercial Measures Assumptions

Table I-9 Summary of Commercial Measure Assumptions in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	21.72	20	\$2.19	14%	100%	\$59.80	187.99	187.99	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	49.80	25	\$20.82	8%	100%	\$42.39	268.70	268.70	AEG BEST
Large Office	Cooling	RTU	1 kBTU/hr	Existing	8.56	15	\$1.02	44%	100%	\$14.70	262.88	262.88	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	Existing	128.09	15	\$210.81	2%	100%	\$203.93	16.35	16.35	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	Existing	108.80	15	\$200.86	1%	100%	\$103.12	4.40	4.40	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	2.63	15	\$2.34	14%	100%	\$63.39	16.94	16.94	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	11.25	25	\$22.89	8%	100%	\$152.60	28.82	28.82	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	Existing	132.52	15	\$200.86	1%	100%	\$103.12	5.36	5.36	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.94	15	\$2.34	14%	100%	\$63.39	12.53	12.53	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.87	25	\$22.89	8%	100%	\$152.60	12.48	12.48	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	29,017.87	20	\$1,330.55	100%	100%	\$4.59	745.98	745.98	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	45%	100%	(\$450.84)	25.19	25.19	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	Existing	53.10	8	\$1.09	100%	100%	(\$76.36)	68.02	78.86	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	Existing	63.66	8	\$4.71	100%	100%	(\$21.00)	51.24	49.25	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	18.40	17	\$28.54	100%	100%	\$46.93	1,355.73	1,257.55	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	High-Bay Lighting	lamps	Existing	232.88	15	\$6.29	100%	100%	(\$135.78)	626.61	585.22	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	Existing	143.10	8	\$1.06	100%	100%	(\$29.97)	20.15	26.37	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	74.44	17	\$64.65	100%	100%	\$29.03	177.84	171.66	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,011.39	15	\$157.49	100%	100%	(\$27.17)	1,179.11	1,119.16	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	14%	100%	\$308.23	4.08	4.08	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	45%	100%	\$30.61	3.10	3.10	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	45%	100%	\$82.36	1.96	1.96	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	66%	100%	(\$10.77)	45.21	45.21	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	76%	100%	\$57.63	26.82	26.82	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	43%	100%	(\$16.35)	24.75	24.75	DW-Food Preparation-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	43%	100%	\$77.66	13.59	13.59	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	43%	100%	(\$35.34)	97.49	97.49	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	159.86	159.86	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	9.48	9.48	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	21.24	21.24	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	14.79	14.79	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	10%	\$0.02	0.75	0.75	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	22.57	20	\$2.19	14%	100%	\$53.75	140.82	140.82	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	44.58	25	\$20.82	8%	100%	\$47.36	174.71	174.71	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	RTU	1 kBTU/hr	New	5.76	15	\$1.02	44%	100%	\$21.83	121.01	121.01	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	New	113.71	15	\$210.81	2%	100%	\$229.71	10.06	10.06	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	New	96.59	15	\$200.86	1%	100%	\$111.27	2.71	2.71	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.27	15	\$2.34	14%	100%	\$71.01	10.64	10.64	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	11.25	25	\$22.89	8%	100%	\$152.60	20.78	20.78	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	New	127.07	15	\$200.86	1%	100%	\$111.27	3.57	3.57	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.81	15	\$2.34	14%	100%	\$71.01	8.51	8.51	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.87	25	\$22.89	8%	100%	\$152.60	9.00	9.00	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	24,028.8 ₂	20	\$1,330.55	100%	100%	\$5.54	641.74	641.74	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	45%	100%	(\$450.84)	16.14	16.14	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	New	53.10	8	\$1.09	100%	100%	(\$76.36)	25.89	27.15	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	New	63.66	8	\$4.71	100%	100%	(\$21.00)	17.80	17.12	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	New	18.40	17	\$28.54	100%	100%	\$46.93	833.70	787.96	USDOE SSL Projections - 2016
Large Office	Interior Lighting	High-Bay Lighting	lamps	New	232.88	15	\$6.29	100%	100%	(\$135.78)	392.34	371.94	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	New	143.10	8	\$1.06	100%	100%	(\$29.97)	7.46	8.60	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	New	74.44	17	\$64.65	100%	100%	\$29.03	105.87	102.96	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,011.39	15	\$157.49	100%	100%	(\$27.17)	787.41	757.85	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	14%	100%	\$308.23	2.81	2.81	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	45%	100%	\$30.61	1.74	1.74	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	45%	100%	\$82.36	1.12	1.12	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	66%	100%	(\$10.77)	28.88	28.88	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	76%	100%	\$57.63	16.16	16.16	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	43%	100%	(\$16.35)	11.77	11.77	DW-Food Preparation-XCELCO-2017-18-1
Large Office	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	43%	100%	\$77.66	10.79	10.79	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	43%	100%	(\$35.34)	74.52	74.52	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	73.34	73.34	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	4.26	4.26	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	8.12	8.12	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	6.40	6.40	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	10%	\$0.02	0.37	0.37	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	Existing	9.58	15	\$1.02	66%	100%	\$13.14	1,345.34	1,345.34	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	12.59	25	\$22.89	7%	100%	\$135.12	98.39	98.39	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	5.62	25	\$22.89	7%	100%	\$135.12	43.92	43.92	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	18,490.12	20	\$1,330.55	100%	100%	\$7.20	2,074.00	2,074.00	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	60%	100%	(\$450.84)	93.43	93.43	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	Existing	49.69	8	\$1.09	100%	100%	(\$80.60)	200.05	232.01	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	Existing	77.84	8	\$4.71	100%	100%	(\$17.18)	214.11	205.76	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	19.93	17	\$28.54	100%	100%	\$43.18	4,197.21	3,920.55	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	Existing	337.65	15	\$6.29	100%	100%	(\$94.42)	2,872.97	2,692.49	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	Existing	109.52	8	\$1.06	100%	100%	(\$31.37)	176.66	185.31	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	95.09	17	\$64.65	100%	100%	\$22.68	242.64	234.26	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	905.61	15	\$157.49	100%	100%	(\$30.34)	4,704.51	4,466.15	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	9%	100%	\$308.23	47.15	47.15	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	5%	100%	\$30.61	9.14	9.14	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	5%	100%	\$82.36	4.02	4.02	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	4%	100%	(\$10.77)	54.83	54.83	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	4%	100%	\$57.63	8.41	8.41	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	4%	100%	(\$16.35)	80.37	80.37	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	4%	100%	\$77.66	25.37	25.37	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	Existing	45,097.45	20	\$142.38	4%	100%	(\$35.34)	182.32	182.32	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	262.23	262.23	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	15.56	15.56	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	34.84	34.84	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	72.79	72.79	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	20%	10%	\$0.02	3.82	3.82	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	New	6.00	15	\$1.02	66%	100%	\$20.97	576.01	576.01	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$126.89	9.93	9.93	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	12.59	25	\$22.89	7%	100%	\$135.12	70.93	70.93	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$126.89	12.60	12.60	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	5.62	25	\$22.89	7%	100%	\$135.12	31.66	31.66	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	New	16,806.80	20	\$1,330.55	100%	100%	\$7.92	1,752.25	1,752.25	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	60%	100%	(\$450.84)	59.88	59.88	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	New	49.69	8	\$1.09	100%	100%	(\$80.60)	74.81	78.52	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	New	77.84	8	\$4.71	100%	100%	(\$17.18)	75.43	72.52	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	New	19.93	17	\$28.54	100%	100%	\$43.18	2,559.67	2,430.79	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	New	337.65	15	\$6.29	100%	100%	(\$94.42)	1,760.51	1,671.54	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	New	109.52	8	\$1.06	100%	100%	(\$31.37)	73.21	71.34	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	New	95.09	17	\$64.65	100%	100%	\$22.68	144.50	140.56	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	New	905.61	15	\$157.49	100%	100%	(\$30.34)	3,187.31	3,069.81	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	9%	100%	\$308.23	32.37	32.37	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	5%	100%	\$30.61	4.96	4.96	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	5%	100%	\$82.36	1.59	1.59	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	4%	100%	(\$10.77)	36.79	36.79	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	4%	100%	\$57.63	5.07	5.07	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	4%	100%	(\$16.35)	21.31	21.31	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	4%	100%	\$77.66	21.83	21.83	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	4%	100%	(\$35.34)	144.61	144.61	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	120.30	120.30	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	6.99	6.99	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	13.32	13.32	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	31.50	31.50	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	20%	10%	\$0.02	1.80	1.80	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	14.16	20	\$2.19	1%	100%	\$17.00	12.11	12.11	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	25.95	25	\$7.67	1%	100%	\$62.66	17.17	17.17	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	6.05	15	\$1.02	79%	100%	\$20.79	404.30	404.30	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	33,074.13	20	\$1,330.55	100%	100%	\$4.02	1,478.71	1,478.71	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Water Heating	Water Heater	1 kBtu/hr	Existing	1.23	13	\$1.69	66%	100%	(\$450.84)	29.89	29.89	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	Existing	144.79	8	\$1.09	100%	100%	(\$34.71)	114.04	162.59	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	Existing	345.76	8	\$4.71	100%	100%	(\$3.85)	294.34	280.82	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	122.64	17	\$64.65	100%	100%	\$17.57	2,806.90	2,710.42	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	705.82	15	\$6.29	100%	100%	(\$44.91)	1,441.06	1,348.39	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	Existing	150.49	8	\$1.06	100%	100%	(\$27.40)	56.77	68.15	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	109.48	17	\$64.65	100%	100%	\$19.69	70.96	68.53	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	927.59	15	\$157.49	100%	100%	(\$29.62)	581.32	551.92	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	14%	100%	\$308.23	8.77	8.77	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	52%	100%	\$30.61	15.06	15.06	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	52%	100%	\$82.36	4.75	4.75	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	49%	100%	(\$10.77)	55.77	55.77	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	45%	100%	\$57.63	25.42	25.42	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	40%	100%	(\$16.35)	38.32	38.32	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	40%	100%	\$77.66	20.22	20.22	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	40%	100%	(\$35.34)	144.87	144.87	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	17.81	17.81	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	1.06	1.06	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	2.36	2.36	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	82%	10%	\$0.04	2.19	2.19	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	0.37	0.37	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	12.86	20	\$2.19	1%	100%	\$18.71	7.28	7.28	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	21.10	25	\$7.67	1%	100%	\$67.79	8.66	8.66	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	New	5.16	15	\$1.02	79%	100%	\$24.36	212.67	212.67	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	28,624.73	20	\$1,330.55	100%	100%	\$4.65	1,069.04	1,069.04	AEG-BEST
Large Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	66%	100%	(\$450.84)	16.58	16.58	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	New	144.79	8	\$1.09	100%	100%	(\$34.71)	41.19	51.28	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	New	345.76	8	\$4.71	100%	100%	(\$3.85)	100.44	96.22	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Interior Lighting	Linear Lighting	lamps	New	122.64	17	\$64.65	100%	100%	\$17.57	1,508.35	1,467.18	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	New	705.82	15	\$6.29	100%	100%	(\$44.91)	864.92	823.48	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	New	150.49	8	\$1.06	100%	100%	(\$27.40)	19.77	21.40	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	109.48	17	\$64.65	100%	100%	\$19.69	38.13	37.09	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	New	927.59	15	\$157.49	100%	100%	(\$29.62)	326.08	312.93	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	14%	100%	\$308.23	5.33	5.33	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	52%	100%	\$30.61	7.61	7.61	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	52%	100%	\$82.36	2.45	2.45	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	49%	100%	(\$10.77)	32.29	32.29	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	45%	100%	\$57.63	13.72	13.72	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	40%	100%	(\$16.35)	15.81	15.81	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	40%	100%	\$77.66	14.57	14.57	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	40%	100%	(\$35.34)	100.39	100.39	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	7.41	7.41	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.43	0.43	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	0.82	0.82	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	82%	10%	\$0.04	0.85	0.85	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	0.17	0.17	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	Existing	6.86	15	\$1.02	67%	100%	\$18.33	969.00	969.00	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	9.01	25	\$22.89	8%	100%	\$195.22	71.02	71.02	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	3.59	25	\$22.89	8%	100%	\$195.22	28.28	28.28	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	10,827.04	20	\$1,330.55	100%	100%	\$12.29	1,212.07	1,212.07	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	62%	100%	(\$450.84)	63.53	63.53	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	Existing	95.56	8	\$1.09	100%	100%	(\$52.59)	188.47	268.69	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	Existing	228.20	8	\$4.71	100%	100%	(\$5.83)	486.43	464.08	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	80.94	17	\$64.65	100%	100%	\$26.63	4,638.69	4,479.25	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	465.84	15	\$6.29	100%	100%	(\$68.04)	2,381.50	2,228.36	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	Existing	150.49	8	\$1.06	100%	100%	(\$27.40)	142.14	170.65	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	109.48	17	\$64.65	100%	100%	\$19.69	177.68	171.59	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	927.59	15	\$157.49	100%	100%	(\$29.62)	1,455.59	1,381.98	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	5%	100%	\$308.23	8.77	8.77	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	5%	100%	\$30.61	4.06	4.06	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	5%	100%	\$82.36	1.79	1.79	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	4%	100%	(\$10.77)	39.23	39.23	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	4%	100%	\$57.63	5.93	5.93	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	4%	100%	(\$16.35)	57.48	57.48	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	4%	100%	\$77.66	18.37	18.37	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	Existing	45,097.45	20	\$142.38	4%	100%	(\$35.34)	131.50	131.50	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	15.11	15.11	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	0.90	0.90	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	2.00	2.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	16.97	16.97	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	4.22	4.22	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	New	5.15	15	\$1.02	67%	100%	\$24.42	448.40	448.40	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	9.01	25	\$22.89	8%	100%	\$195.22	46.14	46.14	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	3.59	25	\$22.89	8%	100%	\$195.22	18.38	18.38	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	10,212.33	20	\$1,330.55	100%	100%	\$13.03	954.99	954.99	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	62%	100%	(\$450.84)	35.25	35.25	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	New	95.56	8	\$1.09	100%	100%	(\$52.59)	68.06	84.75	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	New	228.20	8	\$4.71	100%	100%	(\$5.83)	165.99	159.02	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	New	80.94	17	\$64.65	100%	100%	\$26.63	2,492.70	2,424.67	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	New	465.84	15	\$6.29	100%	100%	(\$68.04)	1,429.37	1,360.88	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	New	150.49	8	\$1.06	100%	100%	(\$27.40)	49.51	53.58	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	109.48	17	\$64.65	100%	100%	\$19.69	95.46	92.86	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	New	927.59	15	\$157.49	100%	100%	(\$29.62)	816.48	783.56	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	5%	100%	\$308.23	5.31	5.31	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	5%	100%	\$30.61	1.95	1.95	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	5%	100%	\$82.36	0.62	0.62	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	4%	100%	(\$10.77)	23.26	23.26	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	4%	100%	\$57.63	3.20	3.20	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	4%	100%	(\$16.35)	13.47	13.47	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	4%	100%	\$77.66	13.82	13.82	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	4%	100%	(\$35.34)	91.47	91.47	COOK_STM-Food Preparation-RTF-v2.4-2
Small Retail	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	6.29	6.29	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.37	0.37	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	0.70	0.70	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	6.59	6.59	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	1.89	1.89	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	5.29	15	\$1.02	73%	100%	\$23.79	228.38	228.38	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	19%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	8,407.04	20	\$1,330.55	100%	100%	\$15.83	268.16	268.16	AEG-BEST
Restaurant	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	58%	100%	(\$450.84)	97.62	97.62	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	Existing	115.65	8	\$1.09	100%	100%	(\$35.74)	210.77	240.46	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	Existing	732.67	8	\$4.71	100%	100%	(\$1.82)	341.76	326.36	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	138.63	17	\$64.65	100%	100%	\$15.56	819.65	791.46	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	Existing	1,081.50	15	\$6.29	100%	100%	(\$30.26)	869.84	824.94	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	Existing	112.08	8	\$1.06	100%	100%	(\$30.79)	32.04	34.77	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	111.77	17	\$64.65	100%	100%	\$19.30	172.56	166.63	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	907.73	15	\$157.49	100%	100%	(\$30.25)	775.20	735.85	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	7%	100%	\$308.23	120.87	120.87	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	97%	100%	\$30.61	127.66	127.66	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	97%	100%	\$82.36	38.90	38.90	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Food Preparation	Oven	1 unit	Existing	15,157.3 ₄	10	\$1,104.16	21%	100%	(\$10.77)	346.73	346.73	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	82%	100%	\$57.63	554.65	554.65	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	53%	100%	(\$16.35)	271.02	271.02	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	84%	100%	\$77.66	236.52	236.52	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	Existing	45,097.4 ₅	20	\$142.38	16%	100%	(\$35.34)	455.65	455.65	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	8.46	8.46	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	0.40	0.40	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	1.12	1.12	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	50%	10%	\$0.04	6.23	6.23	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	2.36	2.36	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Restaurant	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	New	3.92	15	\$1.02	73%	100%	\$32.08	104.40	104.40	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	19%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	7,096.66	20	\$1,330.55	100%	100%	\$18.75	190.60	190.60	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater	1 kBtu/hr	New	1.23	13	\$1.69	58%	100%	(\$450.84)	59.61	59.61	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	New	115.65	8	\$1.09	100%	100%	(\$35.74)	86.01	89.03	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	New	732.67	8	\$4.71	100%	100%	(\$1.82)	136.43	131.63	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	New	138.63	17	\$64.65	100%	100%	\$15.56	440.27	428.24	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	New	1,081.50	15	\$6.29	100%	100%	(\$30.26)	459.84	439.76	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	New	112.08	8	\$1.06	100%	100%	(\$30.79)	10.79	10.80	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	111.77	17	\$64.65	100%	100%	\$19.30	92.70	90.17	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	New	907.73	15	\$157.49	100%	100%	(\$30.25)	452.90	435.30	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	7%	100%	\$308.23	73.19	73.19	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	97%	100%	\$30.61	64.31	64.31	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	97%	100%	\$82.36	20.71	20.71	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	21%	100%	(\$10.77)	208.48	208.48	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	82%	100%	\$57.63	299.37	299.37	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	53%	100%	(\$16.35)	119.20	119.20	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	84%	100%	\$77.66	160.39	160.39	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	16%	100%	(\$35.34)	332.31	332.31	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	3.52	3.52	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.16	0.16	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	0.39	0.39	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	50%	10%	\$0.04	2.38	2.38	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	1.06	1.06	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	28.29	20	\$2.19	1%	100%	\$52.17	5.68	5.68	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	54.85	25	\$20.82	0%	100%	\$38.49	5.87	5.87	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	Existing	10.31	15	\$1.02	71%	100%	\$12.20	268.11	268.11	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	13,120.71	20	\$1,330.55	100%	100%	\$10.14	254.91	254.91	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	63%	100%	(\$450.84)	25.52	25.52	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	Existing	148.81	8	\$1.09	100%	100%	(\$29.58)	68.43	78.95	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	Existing	297.31	8	\$4.71	100%	100%	(\$4.49)	80.09	76.83	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	156.34	17	\$64.65	100%	100%	\$13.73	2,133.43	2,056.49	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	Existing	782.25	15	\$6.29	100%	100%	(\$40.21)	789.61	736.93	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	Existing	166.21	8	\$1.06	100%	100%	(\$26.22)	46.43	57.75	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	105.33	17	\$64.65	100%	100%	\$20.39	168.19	162.14	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	874.86	15	\$157.49	100%	100%	(\$31.34)	739.50	701.14	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	83%	100%	\$308.23	80.01	80.01	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	99%	100%	\$30.61	15.94	15.94	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	99%	100%	\$82.36	9.64	9.64	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	11%	100%	(\$10.77)	40.18	40.18	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	87%	100%	\$57.63	99.60	99.60	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	55%	100%	(\$16.35)	93.28	93.28	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	73%	100%	\$77.66	70.63	70.63	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Grocery	Food Preparation	Steamer	1 unit	Existing	45,097.45	20	\$142.38	20%	100%	(\$35.34)	171.99	171.99	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	4.93	4.93	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	64%	10%	\$0.08	0.19	0.19	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	0.65	0.65	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	2.74	2.74	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	1.70	1.70	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	24.35	20	\$2.19	1%	100%	\$46.32	3.28	3.28	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	44.59	25	\$20.82	0%	100%	\$47.35	3.46	3.46	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	New	8.82	15	\$1.02	71%	100%	\$14.25	156.87	156.87	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	17,906.24	20	\$1,330.55	100%	100%	\$7.43	325.36	325.36	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	63%	100%	(\$450.84)	22.26	22.26	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	New	148.81	8	\$1.09	100%	100%	(\$29.58)	38.68	40.02	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	New	297.31	8	\$4.71	100%	100%	(\$4.49)	28.51	27.37	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Linear Lighting	lamps	New	156.34	17	\$64.65	100%	100%	\$13.73	1,270.71	1,234.54	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	New	782.25	15	\$6.29	100%	100%	(\$40.21)	543.51	517.54	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	New	166.21	8	\$1.06	100%	100%	(\$26.22)	18.59	20.57	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Linear Lighting	lamps	New	105.33	17	\$64.65	100%	100%	\$20.39	100.19	97.35	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	New	874.86	15	\$157.49	100%	100%	(\$31.34)	494.42	475.51	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	83%	100%	\$308.23	50.80	50.80	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	99%	100%	\$30.61	8.92	8.92	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	99%	100%	\$82.36	5.74	5.74	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	11%	100%	(\$10.77)	27.21	27.21	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	87%	100%	\$57.63	60.01	60.01	COOK_FRY-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	55%	100%	(\$16.35)	46.70	46.70	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	73%	100%	\$77.66	53.67	53.67	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	20%	100%	(\$35.34)	142.84	142.84	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	2.26	2.26	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	64%	10%	\$0.08	0.09	0.09	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	0.25	0.25	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	1.18	1.18	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	0.85	0.85	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	25.84	20	\$18.63	17%	100%	\$79.15	220.51	220.51	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	82.79	25	\$20.82	67%	100%	\$25.50	3,611.42	3,611.42	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	Existing	11.62	15	\$1.02	11%	100%	\$10.83	90.16	90.16	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	Existing	173.95	15	\$210.81	0%	100%	\$150.16	3.72	3.72	PTAC-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	3.56	15	\$2.34	1%	100%	\$43.66	1.15	1.15	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	15.22	25	\$22.89	1%	100%	\$106.49	4.53	4.53	AEG BEST
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	3.08	15	\$2.34	1%	100%	\$43.66	1.00	1.00	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	7.88	25	\$22.89	1%	100%	\$106.49	2.34	2.34	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	42,228.67	20	\$1,330.55	100%	100%	\$3.15	1,443.55	1,443.55	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	13%	100%	(\$450.84)	24.72	24.72	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	Existing	90.48	8	\$1.09	100%	100%	(\$33.33)	198.63	190.61	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	Existing	163.67	8	\$4.71	100%	100%	(\$8.15)	106.13	101.69	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	Existing	141.13	17	\$64.65	100%	100%	\$15.29	3,206.18	3,093.30	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	Existing	780.11	15	\$6.29	100%	100%	(\$40.48)	1,598.78	1,491.97	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	Existing	87.39	8	\$1.06	100%	100%	(\$33.76)	12.01	11.83	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	Existing	108.14	17	\$64.65	100%	100%	\$19.96	66.73	64.39	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	Existing	873.60	15	\$157.49	100%	100%	(\$31.39)	511.16	484.69	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	50%	100%	\$308.23	16.18	16.18	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	90%	100%	\$30.61	18.60	18.60	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	90%	100%	\$82.36	5.63	5.63	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	70%	100%	(\$10.77)	276.51	276.51	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	81%	100%	\$57.63	164.98	164.98	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	53%	100%	(\$16.35)	163.51	163.51	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	53%	100%	\$77.66	95.58	95.58	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	53%	100%	(\$35.34)	686.02	686.02	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	30.63	30.63	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	0.73	0.73	CEL_PCLT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	4.07	4.07	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	3.39	3.39	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	2.12	2.12	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	New	19.05	20	\$2.19	17%	100%	\$76.83	116.50	116.50	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	New	58.89	25	\$20.82	67%	100%	\$35.85	1,926.63	1,926.63	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	New	10.04	15	\$1.02	11%	100%	\$12.53	54.97	54.97	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	New	154.42	15	\$210.81	0%	100%	\$169.15	2.36	2.36	PTAC-Cooling-AEG-v2-1
Health	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	New	3.95	15	\$2.34	1%	100%	\$51.04	0.95	0.95	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	New	15.22	25	\$22.89	1%	100%	\$106.49	3.37	3.37	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.72	15	\$2.34	1%	100%	\$51.04	0.41	0.41	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	New	7.88	25	\$22.89	1%	100%	\$106.49	1.75	1.75	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	New	31,432.74	20	\$1,330.55	100%	100%	\$4.23	1,123.66	1,123.66	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	13%	100%	(\$450.84)	16.40	16.40	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	New	90.48	8	\$1.09	100%	100%	(\$33.33)	95.11	87.91	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	New	163.67	8	\$4.71	100%	100%	(\$8.15)	39.00	37.39	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	New	141.13	17	\$64.65	100%	100%	\$15.29	1,973.07	1,918.37	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	New	780.11	15	\$6.29	100%	100%	(\$40.48)	1,091.49	1,037.20	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	New	87.39	8	\$1.06	100%	100%	(\$33.76)	4.81	4.48	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	New	108.14	17	\$64.65	100%	100%	\$19.96	41.08	39.95	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	New	873.60	15	\$157.49	100%	100%	(\$31.39)	357.32	343.86	USDOE SSL Projections - 2016
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	50%	100%	\$308.23	10.87	10.87	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	90%	100%	\$30.61	10.76	10.76	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	90%	100%	\$82.36	3.46	3.46	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	70%	100%	(\$10.77)	182.45	182.45	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	81%	100%	\$57.63	102.92	102.92	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	53%	100%	(\$16.35)	84.53	84.53	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	53%	100%	\$77.66	76.88	76.88	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	53%	100%	(\$35.34)	532.77	532.77	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	14.49	14.49	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.34	0.34	CEL_PCLT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	1.60	1.60	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	1.52	1.52	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	1.08	1.08	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	21.42	20	\$2.19	28%	100%	\$56.58	508.76	508.76	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	Existing	4.72	15	\$1.02	47%	100%	\$26.67	200.76	200.76	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	Existing	70.62	15	\$210.81	3%	100%	\$369.89	15.27	15.27	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	Existing	59.91	15	\$200.86	2%	100%	\$114.65	9.07	9.07	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	6.19	25	\$22.89	6%	100%	\$212.60	15.64	15.64	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	8%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	Existing	157.16	15	\$200.86	2%	100%	\$114.65	23.79	23.79	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	5.38	25	\$22.89	6%	100%	\$212.60	13.61	13.61	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Ventilation	Ventilation	1000 CFM	Existing	15,952.68	20	\$1,330.55	100%	100%	\$8.34	755.12	755.12	AEG-BEST
College	Water Heating	Water Heater	1 kBtu/hr	Existing	1.23	13	\$1.69	55%	100%	(\$450.84)	54.01	54.01	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	Existing	48.20	8	\$1.09	100%	100%	(\$61.96)	48.61	45.61	USDOE SSL Projections - 2016
College	Interior Lighting	Exempted Lighting	lamps	Existing	41.71	8	\$4.71	100%	100%	(\$32.03)	17.59	16.89	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	Existing	76.34	17	\$64.65	100%	100%	\$28.29	2,096.81	2,023.36	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	Existing	418.48	15	\$6.29	100%	100%	(\$75.83)	1,192.67	1,116.57	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	Existing	175.70	8	\$1.06	100%	100%	(\$25.30)	3.85	5.26	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	Existing	101.52	17	\$64.65	100%	100%	\$21.27	752.29	725.94	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	Existing	672.63	15	\$157.49	100%	100%	(\$40.80)	277.02	262.82	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	13%	100%	\$308.23	8.42	8.42	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	27%	100%	\$30.61	4.18	4.18	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	27%	100%	\$82.36	1.38	1.38	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	21%	100%	(\$10.77)	44.89	44.89	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	21%	100%	\$57.63	18.53	18.53	COOK_FRY-Food Preparation-RTF-v2.3-1
College	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	21%	100%	(\$16.35)	43.92	43.92	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	21%	100%	\$77.66	19.19	19.19	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	Existing	45,097.45	20	\$142.38	21%	100%	(\$35.34)	137.48	137.48	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	30.67	30.67	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	0.54	0.54	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	4.08	4.08	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	3.37	3.37	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	1.06	1.06	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	Existing	148.87	7	\$234.00	90%	100%	\$52.83	8.84	8.60	CPLPUMP-Miscellaneous-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Miscellaneous	Pool Heater	1 unit	Existing	500.00	2	\$1.00	36%	100%	\$0.76	0.25	0.25	TBD
College	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	New	13.27	20	\$2.19	28%	100%	\$18.15	264.46	264.46	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	New	3.36	15	\$1.02	47%	100%	\$37.40	106.27	106.27	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	New	62.69	15	\$210.81	3%	100%	\$416.66	10.25	10.25	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	New	53.18	15	\$200.86	2%	100%	\$122.07	6.09	6.09	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	New	6.19	25	\$22.89	6%	100%	\$212.60	12.26	12.26	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	8%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	New	150.69	15	\$200.86	2%	100%	\$122.07	17.25	17.25	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	New	5.38	25	\$22.89	6%	100%	\$212.60	10.67	10.67	AEG BEST
College	Ventilation	Ventilation	1000 CFM	New	16,140.81	20	\$1,330.55	100%	100%	\$8.24	808.70	808.70	AEG-BEST
College	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	55%	100%	(\$450.84)	40.50	40.50	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	New	48.20	8	\$1.09	100%	100%	(\$61.96)	31.75	29.64	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Interior Lighting	Exempted Lighting	lamps	New	41.71	8	\$4.71	100%	100%	(\$32.03)	6.41	6.16	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	New	76.34	17	\$64.65	100%	100%	\$28.29	1,361.51	1,324.15	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	New	418.48	15	\$6.29	100%	100%	(\$75.83)	893.53	852.93	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	New	175.70	8	\$1.06	100%	100%	(\$25.30)	1.54	1.83	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	New	101.52	17	\$64.65	100%	100%	\$21.27	488.48	475.08	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	New	672.63	15	\$157.49	100%	100%	(\$40.80)	206.33	198.75	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	13%	100%	\$308.23	6.42	6.42	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	27%	100%	\$30.61	2.58	2.58	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	27%	100%	\$82.36	0.83	0.83	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	21%	100%	(\$10.77)	33.20	33.20	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	21%	100%	\$57.63	12.22	12.22	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	21%	100%	(\$16.35)	19.24	19.24	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	21%	100%	\$77.66	18.13	18.13	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	21%	100%	(\$35.34)	123.95	123.95	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	15.22	15.22	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.26	0.26	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	1.69	1.69	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	1.59	1.59	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	0.57	0.57	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	New	148.87	7	\$234.00	90%	100%	\$52.83	5.98	5.91	CPLPUMP-Miscellaneous-RTF-v2.1-1
College	Miscellaneous	Pool Heater	1 unit	New	500.00	2	\$1.00	36%	100%	\$0.76	0.06	0.06	TBD
College	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	9.91	20	\$2.19	22%	100%	\$24.30	462.73	462.73	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	Existing	2.18	15	\$1.02	36%	100%	\$57.66	185.90	185.90	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	Existing	32.66	15	\$210.81	2%	100%	\$799.76	14.20	14.20	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	Existing	27.71	15	\$200.86	2%	100%	\$220.39	8.43	8.43	PTHP-Cooling-AEG-v2-1
School	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	2.86	25	\$22.89	4%	100%	\$425.54	14.54	14.54	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	Existing	85.21	15	\$200.86	2%	100%	\$220.39	25.93	25.93	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	2.92	25	\$22.89	4%	100%	\$425.54	14.83	14.83	AEG BEST
School	Ventilation	Ventilation	1000 CFM	Existing	7,437.86	20	\$1,330.55	100%	100%	\$17.89	913.59	913.59	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	50%	100%	(\$450.84)	60.37	60.37	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	Existing	78.47	8	\$1.09	100%	100%	(\$71.65)	120.08	174.98	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	Existing	216.08	8	\$4.71	100%	100%	(\$6.18)	213.94	205.40	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	Existing	21.87	17	\$28.54	100%	100%	\$38.70	3,576.46	3,354.84	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	Existing	300.89	15	\$6.29	100%	100%	(\$105.03)	1,753.89	1,641.05	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	Existing	60.39	8	\$1.06	100%	100%	(\$37.85)	4.32	3.80	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Exterior Lighting	Linear Lighting	lamps	Existing	101.92	17	\$64.65	100%	100%	\$21.14	1,743.76	1,683.36	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	Existing	635.49	15	\$157.49	100%	100%	(\$43.27)	310.02	294.70	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	33%	100%	\$308.23	42.34	42.34	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	66%	100%	\$30.61	25.32	25.32	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	66%	100%	\$82.36	7.81	7.81	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	65%	100%	(\$10.77)	136.11	136.11	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	59%	100%	\$57.63	62.96	62.96	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	52%	100%	(\$16.35)	84.92	84.92	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	52%	100%	\$77.66	49.24	49.24	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	52%	100%	(\$35.34)	353.29	353.29	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	48.07	48.07	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	1.14	1.14	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	6.39	6.39	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	10.67	10.67	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	36%	10%	\$0.02	0.49	0.49	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	Existing	148.87	7	\$234.00	6%	100%	\$52.83	2.77	2.70	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	Existing	500.00	2	\$1.00	1%	100%	\$0.76	0.02	0.02	TBD
School	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
School	Cooling	Air-Cooled Chiller	1 kbtu/h	New	6.14	20	\$2.19	22%	100%	\$39.23	225.18	225.18	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	New	0.00	15	\$7.30	36%	100%	\$80.87	80.70	80.70	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	New	28.99	15	\$210.81	2%	100%	\$900.90	8.74	8.74	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	New	24.60	15	\$200.86	2%	100%	\$234.10	5.19	5.19	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	New	2.86	25	\$22.89	4%	100%	\$425.54	10.48	10.48	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	New	81.71	15	\$200.86	2%	100%	\$234.10	17.24	17.24	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	New	2.92	25	\$22.89	4%	100%	\$425.54	10.69	10.69	AEG BEST
School	Ventilation	Ventilation	1000 CFM	New	7,525.57	20	\$1,330.55	100%	100%	\$17.68	897.29	897.29	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	50%	100%	(\$450.84)	41.39	41.39	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	New	78.47	8	\$1.09	100%	100%	(\$71.65)	73.01	86.33	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	New	216.08	8	\$4.71	100%	100%	(\$6.18)	73.53	70.64	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	New	21.87	17	\$28.54	100%	100%	\$38.70	2,155.80	2,052.55	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	New	300.89	15	\$6.29	100%	100%	(\$105.03)	1,210.14	1,154.51	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	New	60.39	8	\$1.06	100%	100%	(\$37.85)	1.88	1.64	USDOE SSL Projections - 2016
School	Exterior Lighting	Linear Lighting	lamps	New	101.92	17	\$64.65	100%	100%	\$21.14	1,037.71	1,009.32	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	New	635.49	15	\$157.49	100%	100%	(\$43.27)	213.30	205.75	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	33%	100%	\$308.23	28.05	28.05	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	66%	100%	\$30.61	14.19	14.19	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	66%	100%	\$82.36	4.57	4.57	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	65%	100%	(\$10.77)	87.00	87.00	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	59%	100%	\$57.63	37.93	37.93	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	52%	100%	(\$16.35)	42.15	42.15	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	52%	100%	\$77.66	38.38	38.38	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	52%	100%	(\$35.34)	265.84	265.84	COOK_STM-Food Preparation-RTF-v2.4-2
School	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	22.05	22.05	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.51	0.51	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	2.44	2.44	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	4.62	4.62	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	36%	10%	\$0.02	0.24	0.24	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	New	148.87	7	\$234.00	6%	100%	\$52.83	1.71	1.69	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	New	500.00	2	\$1.00	1%	100%	\$0.76	0.00	0.00	TBD
School	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.76	20	\$2.19	2%	100%	\$87.25	1.63	1.63	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.34	25	\$5.48	7%	100%	\$176.23	6.61	6.61	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	Existing	4.19	15	\$1.02	16%	100%	\$30.03	23.38	23.38	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	Existing	62.71	15	\$210.81	39%	100%	\$416.49	67.87	67.87	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	Existing	53.27	15	\$200.86	13%	100%	\$190.49	19.41	19.41	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	1.57	15	\$2.34	5%	100%	\$107.16	1.87	1.87	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	8.54	25	\$22.89	5%	100%	\$223.11	8.06	8.06	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	Existing	77.37	15	\$200.86	13%	100%	\$190.49	28.19	28.19	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.13	15	\$2.34	5%	100%	\$107.16	1.35	1.35	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	2.49	25	\$22.89	5%	100%	\$223.11	2.35	2.35	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	8,557.96	20	\$1,330.55	100%	100%	\$15.55	154.97	154.97	AEG-BEST
Lodging	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	50%	100%	(\$450.84)	43.34	43.34	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	Existing	47.03	8	\$1.09	100%	100%	(\$67.35)	185.41	182.46	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	Existing	251.39	8	\$4.71	100%	100%	(\$5.30)	172.60	164.81	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	69.36	17	\$64.65	100%	100%	\$31.16	280.99	271.74	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	Existing	562.06	15	\$6.29	100%	100%	(\$56.56)	190.00	178.03	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	Existing	55.92	8	\$1.06	100%	100%	(\$38.87)	10.33	8.89	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	106.03	17	\$64.65	100%	100%	\$20.38	15.23	14.73	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	811.63	15	\$157.49	100%	100%	(\$33.50)	931.89	882.77	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	19%	100%	\$308.23	7.37	7.37	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	59%	100%	\$30.61	5.87	5.87	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	59%	100%	\$82.36	3.68	3.68	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Food Preparation	Oven	1 unit	Existing	15,157.3 ₄	10	\$1,104.16	14%	100%	(\$10.77)	22.00	22.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	21%	100%	\$57.63	11.50	11.50	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	30%	100%	(\$16.35)	32.70	32.70	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	30%	100%	\$77.66	15.67	15.67	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	Existing	45,097.4 ₅	20	\$142.38	30%	100%	(\$35.34)	112.10	112.10	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	2.98	2.98	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	0.18	0.18	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	0.40	0.40	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	1.68	1.68	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	58%	10%	\$0.02	0.24	0.24	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	148.87	7	\$234.00	76%	100%	\$52.83	4.95	4.82	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	500.00	2	\$1.00	27%	100%	\$0.76	0.12	0.12	TBD
Lodging	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	New	3.30	20	\$2.19	2%	100%	\$69.23	1.05	1.05	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.84	25	\$5.48	7%	100%	\$207.36	3.54	3.54	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	New	4.17	15	\$1.02	16%	100%	\$30.20	13.77	13.77	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	New	55.67	15	\$210.81	39%	100%	\$469.16	36.08	36.08	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	New	47.29	15	\$200.86	13%	100%	\$204.86	10.32	10.32	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	New	1.61	15	\$2.34	5%	100%	\$112.06	1.20	1.20	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	New	8.54	25	\$22.89	5%	100%	\$223.11	5.03	5.03	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	New	74.19	15	\$200.86	13%	100%	\$204.86	16.18	16.18	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.97	15	\$2.34	5%	100%	\$112.06	0.73	0.73	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	New	2.49	25	\$22.89	5%	100%	\$223.11	1.47	1.47	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	7,111.50	20	\$1,330.55	100%	100%	\$18.71	109.18	109.18	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Water Heating	Water Heater	1 kBtu/hr	New	1.23	13	\$1.69	50%	100%	(\$450.84)	25.32	25.32	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	New	47.03	8	\$1.09	100%	100%	(\$67.35)	71.62	67.18	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	New	251.39	8	\$4.71	100%	100%	(\$5.30)	59.29	56.95	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	New	69.36	17	\$64.65	100%	100%	\$31.16	144.37	140.57	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	New	562.06	15	\$6.29	100%	100%	(\$56.56)	95.82	90.66	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	New	55.92	8	\$1.06	100%	100%	(\$38.87)	4.49	3.94	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	New	106.03	17	\$64.65	100%	100%	\$20.38	7.82	7.62	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	New	811.63	15	\$157.49	100%	100%	(\$33.50)	556.64	535.48	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	19%	100%	\$308.23	4.28	4.28	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	59%	100%	\$30.61	2.85	2.85	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	59%	100%	\$82.36	1.83	1.83	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	14%	100%	(\$10.77)	12.58	12.58	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	21%	100%	\$57.63	5.95	5.95	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	30%	100%	(\$16.35)	11.99	11.99	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	30%	100%	\$77.66	11.18	11.18	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	30%	100%	(\$35.34)	76.68	76.68	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	1.20	1.20	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.07	0.07	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	0.13	0.13	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	0.63	0.63	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	58%	10%	\$0.02	0.10	0.10	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	New	148.87	7	\$234.00	76%	100%	\$52.83	2.60	2.57	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	New	500.00	2	\$1.00	27%	100%	\$0.76	0.02	0.02	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	6.74	15	\$1.02	16%	100%	\$18.67	261.93	261.93	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	Existing	100.90	15	\$210.81	1%	100%	\$258.88	20.25	20.25	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	Existing	85.67	15	\$200.86	0%	100%	\$69.34	4.84	4.84	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	2.07	15	\$2.34	2%	100%	\$47.50	6.75	6.75	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	Existing	273.21	15	\$200.86	0%	100%	\$69.34	15.43	15.43	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	4.03	15	\$2.34	2%	100%	\$47.50	13.16	13.16	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	4,876.49	20	\$1,330.55	100%	100%	\$27.29	624.42	624.42	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	55%	100%	(\$450.84)	33.29	33.29	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	Existing	44.30	8	\$1.09	100%	100%	(\$76.33)	149.72	151.42	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	Existing	24.63	8	\$4.71	100%	100%	(\$54.19)	83.44	80.03	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	22.60	17	\$28.54	100%	100%	\$36.63	1,356.86	1,295.87	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	Existing	341.81	15	\$6.29	100%	100%	(\$93.16)	7,705.27	7,231.66	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	Existing	56.52	8	\$1.06	100%	100%	(\$37.23)	27.75	24.26	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	112.96	17	\$64.65	100%	100%	\$19.12	414.88	400.76	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	797.85	15	\$157.49	100%	100%	(\$34.35)	1,760.52	1,669.77	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	2%	100%	\$308.23	38.59	38.59	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	10%	100%	\$30.61	16.04	16.04	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	10%	100%	\$82.36	6.34	6.34	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	2%	100%	(\$10.77)	15.26	15.26	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	2%	100%	\$57.63	1.59	1.59	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	2%	100%	(\$16.35)	23.68	23.68	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	2%	100%	\$77.66	7.22	7.22	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse	Food Preparation	Steamer	1 unit	Existing	45,097.45	20	\$142.38	2%	100%	(\$35.34)	51.77	51.77	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	30.12	30.12	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	1.43	1.43	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	4.00	4.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	89%	10%	\$0.04	31.08	31.08	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	77%	10%	\$0.02	6.47	6.47	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$7.67	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	New	4.26	15	\$1.02	16%	100%	\$29.53	108.09	108.09	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	New	88.29	15	\$210.81	1%	100%	\$295.85	11.72	11.72	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	New	74.96	15	\$200.86	0%	100%	\$68.95	6.88	6.25	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	New	1.52	15	\$2.34	2%	100%	\$87.54	2.85	2.85	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	New	229.00	15	\$200.86	0%	100%	\$68.95	19.74	17.99	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.79	15	\$2.34	2%	100%	\$87.54	3.35	3.35	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	3,985.16	20	\$1,330.55	100%	100%	\$33.39	468.00	468.00	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	55%	100%	(\$450.84)	23.98	23.98	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	New	44.30	8	\$1.09	100%	100%	(\$76.33)	64.87	61.88	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	New	24.63	8	\$4.71	100%	100%	(\$54.19)	27.30	26.21	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Linear Lighting	lamps	New	22.60	17	\$28.54	100%	100%	\$36.63	780.69	753.22	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	New	341.81	15	\$6.29	100%	100%	(\$93.16)	5,066.13	4,842.58	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	New	56.52	8	\$1.06	100%	100%	(\$37.23)	9.87	8.46	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	112.96	17	\$64.65	100%	100%	\$19.12	235.81	229.45	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	New	797.85	15	\$157.49	100%	100%	(\$34.35)	1,133.23	1,090.40	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	2%	100%	\$308.23	24.90	24.90	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	10%	100%	\$30.61	8.65	8.65	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	10%	100%	\$82.36	2.77	2.77	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	2%	100%	(\$10.77)	9.66	9.66	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	2%	100%	\$57.63	0.91	0.91	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	2%	100%	(\$16.35)	5.59	5.59	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	2%	100%	\$77.66	5.82	5.82	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	2%	100%	(\$35.34)	38.32	38.32	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	13.23	13.23	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.62	0.62	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	1.46	1.46	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	89%	10%	\$0.04	12.76	12.76	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	77%	10%	\$0.02	3.06	3.06	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	14.78	20	\$2.19	15%	100%	\$16.28	462.88	462.88	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	22.38	25	\$7.67	2%	100%	\$70.98	83.06	83.06	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	5.28	15	\$1.02	20%	100%	\$23.84	206.97	206.97	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	Existing	79.00	15	\$210.81	1%	100%	\$330.65	14.69	14.69	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	Existing	67.07	15	\$200.86	0%	100%	\$86.73	1.25	1.25	PTHP-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	1.62	15	\$2.34	2%	100%	\$59.57	3.94	3.94	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	Existing	219.88	15	\$200.86	0%	100%	\$86.73	4.09	4.09	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	3.24	15	\$2.34	2%	100%	\$59.57	7.90	7.90	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	13,740.86	20	\$1,330.55	100%	100%	\$9.68	1,441.19	1,441.19	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBtu/hr	Existing	1.23	13	\$1.69	68%	100%	(\$450.84)	52.92	52.92	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	Existing	44.30	8	\$1.09	100%	100%	(\$76.33)	122.64	124.03	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	Existing	24.63	8	\$4.71	100%	100%	(\$54.19)	68.35	65.55	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	22.60	17	\$28.54	100%	100%	\$36.63	1,111.41	1,061.45	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	Existing	341.81	15	\$6.29	100%	100%	(\$93.16)	6,311.44	5,923.50	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	Existing	56.52	8	\$1.06	100%	100%	(\$37.23)	22.73	19.88	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	112.96	17	\$64.65	100%	100%	\$19.12	339.83	328.26	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	797.85	15	\$157.49	100%	100%	(\$34.35)	1,442.05	1,367.72	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	6,471.87	10	\$333.83	92%	0%	\$7.78	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	2%	100%	\$308.23	220.81	220.81	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	92%	100%	\$30.61	606.01	606.01	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	92%	100%	\$82.36	184.38	184.38	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	41%	100%	(\$10.77)	79.28	79.28	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	41%	100%	\$57.63	38.02	38.02	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	41%	100%	(\$16.35)	64.07	64.07	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	41%	100%	\$77.66	34.42	34.42	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	41%	100%	(\$35.34)	246.70	246.70	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	18.11	18.11	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	0.86	0.86	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	2.40	2.40	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	89%	10%	\$0.04	18.69	18.69	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	77%	10%	\$0.02	3.89	3.89	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	New	9.47	20	\$2.19	15%	100%	\$25.42	191.19	191.19	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	New	14.27	25	\$7.67	2%	100%	\$57.74	28.68	28.68	AEG BEST
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	3.34	15	\$1.02	20%	100%	\$37.72	85.41	85.41	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	New	69.12	15	\$210.81	1%	100%	\$377.87	8.50	8.50	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	New	58.69	15	\$200.86	0%	100%	\$102.42	0.72	0.72	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	New	1.19	15	\$2.34	2%	100%	\$110.15	2.01	2.01	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	2%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	New	184.30	15	\$200.86	0%	100%	\$102.42	2.27	2.27	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.44	15	\$2.34	2%	100%	\$110.15	2.43	2.43	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	11,229.29	20	\$1,330.55	100%	100%	\$11.85	1,080.16	1,080.16	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	68%	100%	(\$450.84)	38.13	38.13	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	New	44.30	8	\$1.09	100%	100%	(\$76.33)	53.13	50.68	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	New	24.63	8	\$4.71	100%	100%	(\$54.19)	22.36	21.47	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	22.60	17	\$28.54	100%	100%	\$36.63	639.47	616.96	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	New	341.81	15	\$6.29	100%	100%	(\$93.16)	4,149.70	3,966.59	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	New	56.52	8	\$1.06	100%	100%	(\$37.23)	8.08	6.93	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	112.96	17	\$64.65	100%	100%	\$19.12	193.15	187.94	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	797.85	15	\$157.49	100%	100%	(\$34.35)	928.24	893.15	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	6,471.87	10	\$333.83	92%	0%	\$7.78	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	2%	100%	\$308.23	142.50	142.50	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	92%	100%	\$30.61	323.57	323.57	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	92%	100%	\$82.36	104.19	104.19	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	41%	100%	(\$10.77)	49.18	49.18	COOK_OVN-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	41%	100%	\$57.63	21.80	21.80	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	41%	100%	(\$16.35)	28.49	28.49	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	41%	100%	\$77.66	26.20	26.20	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	41%	100%	(\$35.34)	180.73	180.73	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	7.96	7.96	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.37	0.37	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	0.88	0.88	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	89%	10%	\$0.04	7.67	7.67	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	77%	10%	\$0.02	1.84	1.84	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1

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Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	74.90	20	\$18.63	15%	100%	\$27.30	4.67	4.67	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	166.47	25	\$20.82	9%	100%	\$12.68	6.60	6.60	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	Existing	28.60	15	\$1.02	48%	100%	\$4.40	6.46	6.46	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	Existing	428.18	15	\$210.81	3%	100%	\$61.00	0.40	0.40	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	Existing	363.71	15	\$200.86	1%	100%	\$64.06	0.11	0.11	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	8.78	15	\$2.34	15%	100%	\$57.14	1.92	1.81	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	37.61	25	\$22.89	8%	100%	\$80.59	1.16	1.16	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	Existing	24.77	15	\$200.86	1%	100%	\$64.06	0.01	0.01	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.37	15	\$2.34	15%	100%	\$57.14	0.04	0.04	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.91	25	\$22.89	8%	100%	\$80.59	0.04	0.04	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	98,969.47	20	\$1,330.55	100%	100%	\$1.34	17.52	17.52	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	45%	100%	(\$450.84)	0.03	0.03	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	Existing	63.35	8	\$1.09	100%	100%	(\$64.01)	0.25	0.29	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	Existing	102.94	8	\$4.71	100%	100%	(\$12.99)	0.26	0.25	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	26.05	17	\$28.54	100%	100%	\$31.24	6.55	6.35	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	Existing	394.71	15	\$6.29	100%	100%	(\$80.11)	3.33	3.11	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	Existing	163.99	8	\$1.06	100%	100%	(\$26.15)	0.05	0.06	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	99.59	17	\$64.65	100%	100%	\$21.70	0.47	0.45	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	884.06	15	\$157.49	100%	100%	(\$31.09)	2.02	1.92	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	14%	100%	\$308.23	0.01	0.01	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	5%	100%	\$30.61	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	5%	100%	\$82.36	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	4%	100%	(\$10.77)	0.01	0.01	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	4%	100%	\$57.63	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	4%	100%	(\$16.35)	0.02	0.02	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	4%	100%	\$77.66	0.01	0.01	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	Existing	45,097.45	20	\$142.38	4%	100%	(\$35.34)	0.05	0.05	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	0.71	0.71	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	0.02	0.02	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	0.09	0.09	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	100%	10%	\$0.04	7.91	7.91	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	40%	10%	\$0.02	0.01	0.01	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	New	50.96	20	\$18.63	15%	100%	\$40.13	2.19	2.19	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	New	106.18	25	\$20.82	9%	100%	\$19.88	2.92	2.92	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	New	18.08	15	\$1.02	48%	100%	\$6.96	2.66	2.66	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	New	380.11	15	\$210.81	3%	100%	\$53.51	0.61	0.60	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	New	322.89	15	\$200.86	1%	100%	\$56.51	0.17	0.16	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	New	6.46	15	\$2.34	15%	100%	\$71.04	0.79	0.71	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	New	37.61	25	\$22.89	8%	100%	\$80.59	0.80	0.80	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	New	23.75	15	\$200.86	1%	100%	\$56.51	0.01	0.01	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.16	15	\$2.34	15%	100%	\$71.04	0.01	0.01	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.91	25	\$22.89	8%	100%	\$80.59	0.03	0.03	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	80,879.73	20	\$1,330.55	100%	100%	\$1.65	14.18	14.18	AEG-BEST
Data Center	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	45%	100%	(\$450.84)	0.02	0.02	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	New	63.35	8	\$1.09	100%	100%	(\$64.01)	0.09	0.10	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	New	102.94	8	\$4.71	100%	100%	(\$12.99)	0.09	0.08	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Interior Lighting	Linear Lighting	lamps	New	26.05	17	\$28.54	100%	100%	\$31.24	3.77	3.68	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	New	394.71	15	\$6.29	100%	100%	(\$80.11)	2.00	1.89	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	New	163.99	8	\$1.06	100%	100%	(\$26.15)	0.02	0.02	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	New	99.59	17	\$64.65	100%	100%	\$21.70	0.27	0.26	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	New	884.06	15	\$157.49	100%	100%	(\$31.09)	1.29	1.24	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	14%	100%	\$308.23	0.00	0.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	5%	100%	\$30.61	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	5%	100%	\$82.36	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	4%	100%	(\$10.77)	0.01	0.01	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	4%	100%	\$57.63	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	4%	100%	(\$16.35)	0.01	0.01	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	4%	100%	\$77.66	0.01	0.01	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	4%	100%	(\$35.34)	0.03	0.03	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	0.31	0.31	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	0.01	0.01	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	0.03	0.03	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	100%	10%	\$0.04	3.26	3.26	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	40%	10%	\$0.02	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Data Center	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	5.78	20	\$2.19	10%	100%	\$41.65	219.09	219.09	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	4.61	25	\$5.48	5%	100%	\$84.15	160.07	160.07	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	2.47	15	\$1.02	57%	100%	\$50.94	612.17	612.17	AEG BEST
Miscellaneous	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	3.25	25	\$22.89	1%	100%	\$470.15	7.19	7.19	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	1.99	25	\$22.89	1%	100%	\$470.15	4.40	4.40	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	4,448.63	20	\$1,330.55	100%	100%	\$29.91	1,023.89	1,023.89	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	Existing	1.23	13	\$1.69	53%	100%	(\$450.84)	116.20	116.20	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	Existing	80.19	8	\$1.09	100%	100%	(\$46.37)	495.23	531.43	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Interior Lighting	Exempted Lighting	lamps	Existing	189.76	8	\$4.71	100%	100%	(\$6.95)	525.10	496.09	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	102.94	17	\$64.65	100%	100%	\$20.98	5,078.36	4,899.74	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	Existing	698.01	15	\$6.29	100%	100%	(\$46.31)	4,335.90	4,085.37	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	Existing	136.12	8	\$1.06	100%	100%	(\$28.28)	63.00	75.98	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	112.67	17	\$64.65	100%	100%	\$19.17	194.47	187.63	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	927.59	15	\$157.49	100%	100%	(\$29.62)	1,614.40	1,531.07	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	457.67	10	\$999.69	12%	100%	\$308.23	47.35	47.35	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	425.00	9	\$80.91	22%	100%	\$30.61	20.77	20.77	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	81.00	10	\$44.23	22%	100%	\$82.36	14.06	14.06	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	Existing	15,157.34	10	\$1,104.16	59%	100%	(\$10.77)	121.11	121.11	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	2,448.94	8	\$814.12	30%	100%	\$57.63	31.08	31.08	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	2,214.09	10	\$83.55	15%	100%	(\$16.35)	46.66	46.66	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	1,247.18	20	\$882.04	15%	100%	\$77.66	18.22	18.22	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	45,097.45	20	\$142.38	15%	100%	(\$35.34)	131.59	131.59	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	123.52	5	\$0.01	100%	10%	\$0.02	42.78	42.78	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	36.86	4	\$0.01	100%	10%	\$0.08	2.52	2.52	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	30.65	4	\$0.01	100%	10%	\$0.10	5.69	5.69	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	Existing	77.04	4	\$0.01	66%	10%	\$0.04	18.00	18.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	123.52	5	\$0.01	28%	10%	\$0.02	1.70	1.70	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	148.87	7	\$234.00	4%	100%	\$52.83	1.21	1.18	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	500.00	2	\$1.00	1%	100%	\$0.76	0.02	0.02	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	New	5.25	20	\$2.19	10%	100%	\$45.86	158.30	158.30	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.75	25	\$5.48	5%	100%	\$144.61	56.17	56.17	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	1.85	15	\$1.02	57%	100%	\$67.86	341.12	341.12	AEG BEST
Miscellaneous	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	New	3.25	25	\$22.89	1%	100%	\$470.15	5.64	5.64	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	New	1.99	25	\$22.89	1%	100%	\$470.15	3.45	3.45	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	4,196.05	20	\$1,330.55	100%	100%	\$31.71	978.04	978.04	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	New	1.23	13	\$1.69	53%	100%	(\$450.84)	78.59	78.59	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	New	80.19	8	\$1.09	100%	100%	(\$46.37)	243.41	241.10	USDOE SSL Projections - 2016

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Miscellaneous	Interior Lighting	Exempted Lighting	lamps	New	189.76	8	\$4.71	100%	100%	(\$6.95)	218.00	207.13	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	102.94	17	\$64.65	100%	100%	\$20.98	3,295.11	3,204.27	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	New	698.01	15	\$6.29	100%	100%	(\$46.31)	3,067.98	2,934.28	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	New	136.12	8	\$1.06	100%	100%	(\$28.28)	25.01	26.99	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	112.67	17	\$64.65	100%	100%	\$19.17	126.19	122.72	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	927.59	15	\$157.49	100%	100%	(\$29.62)	1,073.62	1,029.15	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	457.67	10	\$999.69	12%	100%	\$308.23	36.12	36.12	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	New	425.00	9	\$80.91	22%	100%	\$30.61	12.84	12.84	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	81.00	10	\$44.23	22%	100%	\$82.36	8.25	8.25	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	New	15,157.34	10	\$1,104.16	59%	100%	(\$10.77)	85.01	85.01	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	New	2,448.94	8	\$814.12	30%	100%	\$57.63	20.50	20.50	COOK_FRY-Food Preparation-RTF-v2.3-1

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Miscellaneous	Food Preparation	Dishwasher	1 unit	New	2,214.09	10	\$83.55	15%	100%	(\$16.35)	18.76	18.76	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	1,247.18	20	\$882.04	15%	100%	\$77.66	17.96	17.96	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Miscellaneous	Food Preparation	Steamer	1 unit	New	45,097.45	20	\$142.38	15%	100%	(\$35.34)	122.05	122.05	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	123.52	5	\$0.01	100%	10%	\$0.02	21.23	21.23	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	New	36.86	4	\$0.01	100%	10%	\$0.08	1.23	1.23	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	New	30.65	4	\$0.01	100%	10%	\$0.10	2.35	2.35	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	New	77.04	4	\$0.01	66%	10%	\$0.04	8.41	8.41	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	123.52	5	\$0.01	28%	10%	\$0.02	0.89	0.89	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	148.87	7	\$234.00	4%	100%	\$52.83	0.82	0.81	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	500.00	2	\$1.00	1%	100%	\$0.76	0.01	0.01	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

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Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$0.84	15%	35%	\$69.24	13.12	13.53	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	1.10	45	\$0.84	15%	35%	\$69.24	104.83	106.10	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$69.24	1.90	1.97	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.13	20	\$0.86	15%	35%	\$745.54	34.82	35.93	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$745.54	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$745.54	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.45	20	\$0.81	45%	50%	\$9,999.00	19.76	20.39	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.55	20	\$0.81	45%	50%	\$9,999.00	-13.15	-13.31	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.34	20	\$0.81	45%	50%	\$9,999.00	-16.23	-16.82	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.24	45	\$1.70	15%	35%	\$65.72	-35.99	-37.14	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.72	45	\$1.70	15%	35%	\$65.72	139.78	141.47	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	1.07	45	\$1.70	15%	35%	\$65.72	172.58	178.80	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	5.41	18	\$0.59	15%	50%	\$9,999.00	14.17	14.62	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.93	18	\$0.59	15%	50%	\$9,999.00	-14.15	-14.32	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.17	18	\$0.59	15%	50%	\$9,999.00	-17.47	-18.10	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.06	30	\$37.07	48%	48%	\$116.37	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2

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Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	20.29	30	\$37.07	48%	48%	\$116.37	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.26	30	\$37.07	48%	48%	\$116.37	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,272.93	10	\$914.46	15%	75%	\$43.53	21.41	22.04	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	397.62	15	\$248.07	15%	75%	\$79.85	361.70	372.42	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	845.94	15	\$263.92	15%	75%	\$39.93	76.95	79.23	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	24.94	15	\$248.07	15%	75%	\$1,248.29	9.00	8.99	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	30,046.11	10	\$1,796.53	15%	75%	\$26.42	77.96	77.84	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	113.41	5	\$267.96	18%	75%	\$576.91	295.70	304.65	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.31	15	\$0.05	5%	15%	\$21.43	87.34	91.71	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.14	14	\$5.25	3%	75%	\$164.87	417.99	425.66	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.58	18	\$0.26	15%	20%	\$53.07	82.21	85.17	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	798.17	15	\$189.00	13%	25%	\$30.79	106.41	112.42	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	287.62	15	\$1,273.23	13%	50%	\$575.70	120.53	127.34	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.37	15	\$0.10	13%	50%	\$34.78	423.57	447.50	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	22%	30%	\$866.90	8.22	8.68	VENT_DCV-Ventilation-7PLN-v5-5

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Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.78	15	\$0.76	7%	10%	\$47.71	31.36	31.93	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.26	15	\$0.76	7%	10%	\$47.71	100.54	106.22	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,358.79	15	\$7,501.21	15%	30%	\$68.99	123.73	129.92	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,410.86	15	\$7,501.21	15%	30%	\$68.99	208.74	212.57	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	10.69	11.04	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	Existing	316.82	15	\$410.87	15%	45%	\$164.78	357.69	364.41	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	167.95	15	\$698.92	15%	75%	\$528.77	365.70	370.89	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	281.45	20	\$1,370.94	15%	25%	\$219.41	5.60	5.89	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	420.39	20	\$1,370.94	15%	25%	\$219.41	92.85	92.85	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.49	5	\$0.75	30%	40%	\$104.95	128.01	132.08	STAT_WIFI-All-7PLN-v2-1
Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.78	5	\$0.75	30%	40%	\$104.95	111.50	112.85	STAT_WIFI-All-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.49	5	\$0.75	30%	40%	\$104.95	137.66	142.63	STAT_WIFI-All-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	142.34	10	\$8.63	25%	65%	\$9.41	20.06	20.64	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	156.41	10	\$17.56	25%	65%	(\$105.53)	11.02	11.34	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	30.91	10	\$16.82	25%	65%	(\$177.21)	2.15	2.20	CDHW_TSRVLV-Water Heating-RTF-v1.3-1

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Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$8.98	12.78	12.98	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	578.80	15	\$15.38	16%	75%	\$3.39	49.60	50.85	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	658.05	4	\$75.87	25%	40%	(\$90.69)	34.29	35.16	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$25.88	26.96	27.64	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$2,254.21	85.84	88.01	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.36	3%	23%	\$120.88	311.24	322.84	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.55	15	\$0.60	3%	23%	\$142.46	435.73	451.97	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	147.76	15	\$56.14	1%	3%	\$51.38	8.40	9.22	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.58	15	\$65.99	1%	3%	\$169.71	0.36	0.40	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,801.96	11	\$26.48	15%	30%	\$1.45	128.57	136.34	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	286.92	16	\$1,864.95	5%	15%	\$825.53	87.77	93.07	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.62	9	\$0.65	15%	25%	\$68.95	198.91	213.67	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	103.94	8	\$56.85	15%	25%	\$101.80	105.72	113.57	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	129.97	7	\$3,486.31	15%	30%	\$5,462.07	198.29	213.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	20.24	12	\$50.74	0%	0%	\$363.24	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	4.87	4	\$24.51	0%	0%	\$1,478.94	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	29.93	15	\$347.21	0%	0%	\$1,540.59	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	24.84	2	\$10.74	0%	0%	\$338.03	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.74	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.00	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	94.01	15	\$305.13	0%	0%	\$921.39	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	376.48	15	\$539.09	0%	0%	\$190.17	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	791.00	10	\$449.00	0%	0%	\$91.78	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	45.49	16	\$153.90	0%	0%	\$433.66	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	16.36	15	\$135.00	0%	0%	\$1,089.45	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	173.65	16	\$105.92	0%	0%	\$82.50	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2

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Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	133.67	10	\$521.11	0%	0%	\$661.11	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	79.67	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	160.25	12	\$605.15	0%	0%	\$561.11	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.04	8	\$15.90	0%	0%	\$319.65	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.93	8	\$3.87	0%	0%	\$754.78	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.27	5	\$49.37	0%	0%	\$3,753.69	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,625.83	5	\$288.64	25%	75%	\$44.33	20.72	21.43	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	7,747.55	18	\$8,815.42	25%	50%	\$136.63	220.77	228.74	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	188.07	15	\$335.00	0%	0%	\$90.31	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	282.04	15	\$335.00	0%	0%	\$90.31	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	117.38	4	\$37.32	10%	50%	\$85.06	350.60	319.93	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.05	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$6.82	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	8,320.58	18	\$4,231.40	0%	0%	\$61.07	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.83	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	143.64	7	\$423.28	0%	0%	(\$634.70)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$634.70)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$634.70)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	22,059.63	15	\$1,114.41	0%	0%	\$6.44	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$6.44	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6

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Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	9,266.15	6	\$37.07	1%	3%	\$0.84	41.71	41.71	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.05	20	\$0.53	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.62	25	\$4.24	0%	0%	\$95.19	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	1.39	25	\$4.24	0%	0%	\$95.19	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.73	25	\$4.24	0%	0%	\$95.19	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.24	0%	0%	\$95.19	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.50	25	\$4.24	0%	0%	\$95.19	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$95.19	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.10	3%	14%	\$41.79	41.63	43.71	COM_SEM-HVAC-AEG-1
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.10	3%	14%	\$41.79	36.26	36.93	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.10	3%	14%	\$41.79	44.77	47.30	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.10	3%	14%	\$41.79	7.05	7.23	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.10	3%	14%	\$41.79	41.86	45.50	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.10	3%	14%	\$41.79	21.58	23.19	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.10	3%	14%	\$41.79	3.77	3.57	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.15	3	\$0.10	3%	14%	\$41.79	63.13	57.61	COM_SEM-Office Equipment-AEG-1

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Large Office	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.44	0%	0%	\$176.02	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	Existing	0.29	3	\$0.44	0%	0%	\$176.02	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	Existing	0.18	3	\$0.44	0%	0%	\$176.02	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.44	0%	0%	\$176.02	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.15	3	\$0.44	0%	0%	\$176.02	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.44	0%	0%	\$176.02	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.44	0%	0%	\$176.02	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.18	3	\$0.14	14%	61%	\$55.88	246.29	258.62	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	Existing	0.29	3	\$0.14	14%	61%	\$55.88	214.53	218.46	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.14	14%	61%	\$55.88	264.87	279.83	COM_RCX-HVAC-AEG-1
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.14	14%	61%	\$55.88	13.91	14.26	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.14	14%	61%	\$55.88	206.36	224.34	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.14	14%	61%	\$55.88	106.41	114.31	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.14	14%	61%	\$55.88	37.21	35.19	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.11	10	\$0.09	0%	0%	\$137.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.07	10	\$1.12	0%	0%	\$2,414.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.24	0%	0%	\$4,654.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	Existing	108.77	16	\$75.53	20%	75%	\$83.54	5.95	5.95	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	12,243.61	25	\$20,242.59	0%	75%	\$182.78	344.91	346.91	WHP Analysis
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$188.25	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.43	45	\$0.84	15%	50%	\$188.25	24.09	24.10	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$188.25	0.65	0.65	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.18	20	\$0.86	15%	50%	\$514.94	30.21	30.22	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$514.94	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$514.94	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.81	45%	50%	\$9,999.00	1.01	1.01	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.22	20	\$0.81	45%	50%	\$9,999.00	-1.76	-1.76	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.12	20	\$0.81	45%	50%	\$9,999.00	-1.99	-1.99	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$264.27	-0.35	-0.35	Building Energy Simulation Tool

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Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.41	45	\$1.70	15%	50%	\$264.27	19.60	19.61	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.22	45	\$1.70	15%	50%	\$264.27	22.15	22.15	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	12.97	18	\$0.59	15%	35%	\$2.06	6.70	6.70	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	12.85	18	\$0.59	15%	35%	\$2.06	3.44	3.44	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.89	18	\$0.59	15%	35%	\$2.06	3.89	3.89	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.45	30	\$37.07	66%	66%	\$122.00	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	20.47	30	\$37.07	66%	66%	\$122.00	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.32	30	\$37.07	66%	66%	\$122.00	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,943.44	10	\$914.46	15%	75%	\$46.37	3.26	3.24	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	357.59	15	\$248.07	15%	75%	\$85.05	68.40	68.07	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	760.78	15	\$263.92	15%	75%	\$42.53	14.55	14.48	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	30.33	15	\$248.07	15%	75%	\$986.78	2.26	2.23	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	26,186.12	10	\$1,796.53	15%	75%	\$29.13	11.30	11.14	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	83.53	5	\$267.96	18%	75%	\$761.91	21.35	21.36	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.23	15	\$0.05	10%	15%	\$27.95	6.81	6.81	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.18	14	\$5.25	75%	75%	\$161.35	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.51	18	\$0.26	15%	20%	\$58.12	24.94	24.94	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	736.69	15	\$189.00	19%	25%	\$31.78	9.43	9.42	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	265.47	15	\$1,273.23	19%	50%	\$594.10	18.72	18.72	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.33	15	\$0.09	19%	50%	\$35.89	65.79	65.78	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	22%	30%	\$949.28	1.53	1.53	VENT_DCV-Ventilation-7PLN-v5-5
Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.81	15	\$0.70	7%	10%	\$64.07	6.53	6.54	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.55	15	\$0.70	7%	10%	\$64.07	9.42	9.42	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,467.02	15	\$7,501.21	15%	30%	\$71.79	19.29	19.30	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,502.44	15	\$7,501.21	15%	30%	\$71.79	42.59	42.63	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	New	5.67	3	\$33.20	15%	45%	\$2,098.38	0.38	0.39	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	New	208.04	15	\$410.87	15%	45%	\$246.42	75.86	76.02	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	110.29	15	\$698.92	15%	75%	\$790.74	92.39	92.52	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	222.92	20	\$1,370.94	15%	25%	\$213.64	1.19	1.19	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	481.71	20	\$1,370.94	15%	25%	\$213.64	25.99	25.99	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.36	5	\$0.75	30%	40%	\$113.77	10.11	10.12	STAT_WIFI-All-7PLN-v2-1

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Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.79	5	\$0.75	30%	40%	\$113.77	11.52	11.53	STAT_WIFI-AII-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	30%	40%	\$113.77	13.02	13.02	STAT_WIFI-AII-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	45.35	10	\$8.63	25%	65%	\$28.70	2.78	2.78	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	49.83	10	\$17.56	25%	65%	(\$321.87)	1.53	1.53	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	9.85	10	\$16.82	25%	65%	(\$540.48)	0.34	0.34	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$9.13	3.07	3.07	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	553.22	15	\$15.38	1%	75%	\$3.44	12.20	12.20	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	209.66	4	\$75.87	25%	40%	(\$276.61)	2.66	2.66	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	1.11	1.11	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,291.77	17.30	17.30	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.42	15	\$0.36	11%	23%	\$106.61	128.49	129.99	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.59	15	\$0.60	11%	23%	\$125.64	179.89	181.98	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	152.12	15	\$56.14	1%	3%	\$47.66	1.58	1.63	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	0.00	15	\$65.99	1%	3%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,594.16	11	\$26.48	15%	30%	\$1.49	21.68	21.99	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	265.64	16	\$1,864.95	5%	15%	\$849.13	17.67	17.90	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.17	9	\$0.65	15%	25%	\$91.13	23.01	23.54	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	75.36	8	\$56.85	15%	25%	\$134.54	11.22	11.49	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	94.23	7	\$3,486.31	15%	30%	\$7,219.06	19.09	19.55	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	19.06	12	\$50.74	0%	0%	\$369.01	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.45	4	\$24.51	0%	0%	\$1,544.35	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	28.11	15	\$347.21	0%	0%	\$1,562.31	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	20.77	2	\$10.74	0%	0%	\$382.54	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.70	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.21	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	88.27	15	\$305.13	0%	0%	\$934.38	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

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Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	353.51	15	\$539.09	0%	0%	\$192.85	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	742.74	10	\$449.00	0%	0%	\$93.07	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	42.55	16	\$153.90	0%	0%	\$442.77	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	15.30	15	\$135.00	0%	0%	\$1,112.34	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	147.22	16	\$105.92	0%	0%	\$92.37	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	113.33	10	\$521.11	0%	0%	\$740.18	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.38	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	150.48	12	\$5,648.09	0%	0%	\$5,310.84	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.48	8	\$15.90	0%	0%	\$325.10	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.87	8	\$3.87	0%	0%	\$767.65	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.07	5	\$49.37	0%	0%	\$3,818.42	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,517.97	5	\$288.64	25%	75%	\$45.17	1.86	1.86	VEND_CTRL-Miscellaneous-SCE-17R0-41

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Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	6,738.99	18	\$8,815.42	25%	50%	\$149.61	66.99	66.98	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	148.96	15	\$335.00	0%	0%	\$88.15	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	321.89	15	\$335.00	0%	0%	\$88.15	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	199.27	4	\$37.32	10%	50%	\$49.80	46.36	42.17	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.05	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.55	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.55	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.55	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$3.79	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	7,237.43	18	\$4,231.40	0%	0%	\$66.87	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

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Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.76	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	137.29	7	\$423.28	0%	0%	(\$645.27)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$645.27)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$645.27)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	21,084.89	15	\$1,114.41	0%	0%	\$6.55	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$6.55	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,088.72	6	\$37.07	1%	3%	\$2.51	6.66	6.66	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.05	20	\$0.47	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	New	0.63	25	\$4.24	10%	30%	\$90.90	78.43	78.45	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	New	1.39	25	\$4.24	10%	30%	\$90.90	89.39	89.42	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.74	25	\$4.24	10%	30%	\$90.90	100.99	100.99	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	30%	\$90.90	16.80	16.80	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	1.52	25	\$4.24	10%	30%	\$90.90	774.55	784.63	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.54	25	\$4.24	10%	30%	\$90.90	210.28	212.24	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.14	3%	14%	\$47.65	1.97	1.97	COM_SEM-HVAC-AEG-1

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Large Office	Heating	Strategic Energy Management	sqft	New	0.21	3	\$0.14	3%	14%	\$47.65	2.25	2.25	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.12	3	\$0.14	3%	14%	\$47.65	2.54	2.54	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.14	3%	14%	\$47.65	0.42	0.42	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.23	3	\$0.14	3%	14%	\$47.65	4.87	5.08	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.14	3%	14%	\$47.65	1.76	1.81	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.14	3%	14%	\$47.65	0.38	0.35	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.26	3	\$0.14	3%	14%	\$47.65	6.43	5.83	COM_SEM-Office Equipment-AEG-1
Large Office	Cooling	Commissioning	sqft	New	0.14	3	\$0.50	100%	100%	\$178.37	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	New	0.30	3	\$0.50	100%	100%	\$178.37	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	New	0.16	3	\$0.50	100%	100%	\$178.37	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.50	100%	100%	\$178.37	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	New	0.27	3	\$0.50	100%	100%	\$178.37	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	New	0.10	3	\$0.50	100%	100%	\$178.37	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	New	0.04	3	\$0.50	100%	100%	\$178.37	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	New	0.14	3	\$0.16	0%	0%	\$56.62	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	New	0.30	3	\$0.16	0%	0%	\$56.62	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	New	0.16	3	\$0.16	0%	0%	\$56.62	0.00	0.00	COM_RCX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.16	0%	0%	\$56.62	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.27	3	\$0.16	0%	0%	\$56.62	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.16	0%	0%	\$56.62	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.04	3	\$0.16	0%	0%	\$56.62	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.19	10	\$0.09	0%	0%	\$72.89	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.11	10	\$1.12	0%	0%	\$1,445.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.03	3	\$0.24	0%	0%	\$2,786.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.05	10	\$3.24	0%	0%	\$8,570.40	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,299.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	New	108.77	16	\$75.53	20%	75%	\$83.54	1.03	1.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	12,919.42	25	\$19,876.02	0%	75%	\$165.34	125.22	125.22	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.11	45	\$0.84	15%	35%	\$145.31	169.02	174.98	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.44	45	\$0.84	15%	35%	\$145.31	365.27	371.26	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$145.31	47.66	48.36	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.24	20	\$0.86	15%	35%	\$421.40	93.68	96.98	Building Energy Simulation Tool

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Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$421.40	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$421.40	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.81	45%	50%	\$9,999.00	136.89	141.72	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.29	20	\$0.81	45%	50%	\$9,999.00	-60.88	-61.88	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$9,999.00	-28.41	-28.83	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.18	45	\$1.70	15%	35%	\$94.96	-103.04	-106.67	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.59	45	\$1.70	15%	35%	\$94.96	487.02	495.01	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.34	45	\$1.70	15%	35%	\$94.96	227.29	230.60	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.68	18	\$0.59	15%	50%	\$9,999.00	29.26	30.29	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-11.04	18	\$0.59	15%	50%	\$9,999.00	-45.91	-46.66	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.33	18	\$0.59	15%	50%	\$9,999.00	-21.42	-21.74	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.27	30	\$37.07	48%	48%	\$148.43	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	18.76	30	\$37.07	48%	48%	\$148.43	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.28	30	\$37.07	48%	48%	\$148.43	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	127.86	5	\$267.96	18%	75%	\$510.51	1,018.73	1,049.90	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.34	15	\$0.05	5%	15%	\$19.10	298.01	314.35	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.94	14	\$5.25	3%	75%	\$138.96	1,456.39	1,492.94	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.24	18	\$0.26	15%	20%	\$127.48	108.27	109.85	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	318.14	15	\$189.00	13%	25%	\$75.14	140.15	143.36	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	114.64	15	\$1,273.23	13%	25%	\$1,404.74	50.50	51.66	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.15	15	\$0.10	13%	25%	\$84.86	177.48	181.55	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	2%	56%	\$2,082.31	75.21	76.94	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.93	15	\$0.76	1%	19%	\$66.52	759.29	778.34	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.51	15	\$0.76	1%	19%	\$66.52	920.21	941.29	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,775.13	15	\$7,501.21	15%	15%	\$58.91	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,424.92	15	\$7,501.21	15%	15%	\$58.91	0.00	0.00	HVLS-Heating-AEG-1

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Small Office	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	48.86	50.48	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	Existing	354.59	15	\$410.87	15%	45%	\$147.23	1,830.53	1,864.92	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	187.98	15	\$698.92	15%	75%	\$472.43	1,871.50	1,898.07	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	308.56	20	\$1,370.94	15%	75%	\$191.37	103.88	114.24	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	508.51	20	\$1,370.94	15%	75%	\$191.37	1,924.31	1,924.31	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.55	5	\$0.75	30%	40%	\$109.42	436.79	452.18	STAT_WIFI-All-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.93	5	\$0.75	30%	40%	\$109.42	388.49	394.86	STAT_WIFI-All-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.20	5	\$0.75	30%	40%	\$109.42	181.31	183.95	STAT_WIFI-All-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	25.63	10	\$8.63	25%	65%	\$52.27	74.41	76.56	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	28.16	10	\$17.56	25%	65%	(\$586.18)	40.88	42.06	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	5.56	10	\$16.82	25%	65%	(\$984.30)	7.96	8.17	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	0%	0%	\$8.98	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	104.38	15	\$15.38	16%	75%	\$18.79	184.27	188.94	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	118.47	4	\$75.87	25%	40%	(\$503.74)	127.19	130.41	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$25.88	100.00	102.53	DHW_STBK-Water Heating-ILTRM-v4.0-4

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Small Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.96	20	\$258.33	1%	30%	\$2,252.92	318.57	326.65	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.44	15	\$0.36	3%	23%	\$108.29	1,077.97	1,118.15	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.61	15	\$0.60	3%	23%	\$127.62	1,509.15	1,565.41	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	98.60	15	\$56.14	1%	3%	\$76.79	29.07	31.89	CLTG_EXITLEC-Interior Lighting-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.61	15	\$65.99	1%	3%	\$169.17	1.90	2.08	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,504.50	11	\$26.48	15%	30%	\$1.62	359.58	378.30	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	256.46	16	\$1,864.95	5%	15%	\$921.09	245.47	258.25	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	3.65	9	\$0.65	15%	25%	\$30.69	719.49	771.39	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	129.08	8	\$56.85	15%	25%	\$82.16	382.41	410.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	161.41	7	\$3,486.31	15%	30%	\$4,408.17	717.26	768.99	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	19.76	12	\$50.74	0%	0%	\$355.87	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.19	4	\$24.51	0%	0%	\$1,348.01	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	14.18	15	\$347.21	0%	0%	\$2,772.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	22.65	2	\$10.74	0%	0%	\$348.90	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.35	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	6.16	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	44.53	15	\$305.13	0%	0%	\$1,658.01	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	178.32	15	\$539.09	0%	0%	\$342.21	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	374.66	10	\$449.00	0%	0%	\$165.15	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	0.76	16	\$153.90	0%	0%	\$9,999.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	0.27	15	\$135.00	0%	0%	\$9,999.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	137.67	16	\$105.92	0%	0%	\$92.03	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	105.98	10	\$521.11	0%	0%	\$737.48	0.00	0.00	RFG_DDEF-Refrigeration-VITRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	72.63	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	75.91	12	\$605.15	0%	0%	\$1,009.69	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.17	8	\$15.90	0%	0%	\$9,999.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.02	8	\$3.87	0%	0%	\$9,999.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.18	5	\$49.37	0%	0%	\$3,682.43	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,735.67	5	\$288.64	25%	75%	\$41.25	29.41	30.08	VEND_CTRL-Miscellaneous-SCE-17R0-42
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,137.00	18	\$8,815.42	25%	50%	\$328.19	290.77	295.01	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	206.18	15	\$335.00	0%	0%	\$78.86	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	340.81	15	\$335.00	0%	0%	\$78.86	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	72.91	4	\$37.32	10%	50%	\$133.78	705.60	623.65	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.08	5	\$0.01	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.94	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$1.94	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$5.86	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	673.80	18	\$4,231.40	0%	0%	\$733.41	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.82	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	25.86	7	\$423.28	0%	0%	(\$3,525.42)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$3,525.42)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$3,525.42)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	3,971.49	15	\$1,114.41	0%	0%	\$299.42	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$299.42	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,550.71	6	\$37.07	1%	3%	\$5.00	108.30	108.30	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.04	20	\$0.42	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	0.63	25	\$4.24	0%	0%	\$101.33	0.00	0.00	ADVNC-All-RSRCH-1

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Small Office	Heating	Advanced New Construction Designs	sqft	Existing	1.37	25	\$4.24	0%	0%	\$101.33	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.30	25	\$4.24	0%	0%	\$101.33	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.24	0%	0%	\$101.33	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.68	25	\$4.24	0%	0%	\$101.33	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$101.33	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.09	3%	14%	\$38.46	142.05	149.84	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.09	3%	14%	\$38.46	126.35	129.52	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.09	3%	14%	\$38.46	58.97	60.32	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.09	3%	14%	\$38.46	26.17	26.83	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.09	3%	14%	\$38.46	144.93	157.36	COM_SEM-Lighting-AEG-1
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.09	3%	14%	\$38.46	78.07	83.70	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.09	3%	14%	\$38.46	8.10	3.87	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.10	3	\$0.09	3%	14%	\$38.46	127.06	112.30	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	Existing	0.21	3	\$0.44	0%	0%	\$177.43	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	Existing	0.35	3	\$0.44	0%	0%	\$177.43	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.44	0%	0%	\$177.43	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.44	0%	0%	\$177.43	0.00	0.00	COM_CX-Water Heating-AEG-1

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Small Office	Interior Lighting	Commissioning	sqft	Existing	0.17	3	\$0.44	0%	0%	\$177.43	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.44	0%	0%	\$177.43	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.44	0%	0%	\$177.43	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.21	3	\$0.14	14%	61%	\$56.32	840.40	886.47	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	Existing	0.35	3	\$0.14	14%	61%	\$56.32	747.47	766.23	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.14	14%	61%	\$56.32	348.84	356.83	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.14	14%	61%	\$56.32	51.60	52.91	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.17	3	\$0.14	14%	61%	\$56.32	714.54	775.80	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.14	14%	61%	\$56.32	384.90	412.67	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.14	14%	61%	\$56.32	79.87	38.18	COM_RCX-Refrigeration-AEG-1
Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$123.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.02	10	\$1.12	0%	0%	\$5,097.99	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,829.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Office	Miscellaneous	LED Signage	perBldg	Existing	106.71	16	\$75.53	20%	75%	\$85.15	90.51	90.51	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,742.20	25	\$4,533.73	0%	75%	\$182.78	293.95	295.65	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$272.41	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.30	45	\$0.84	15%	50%	\$272.41	148.13	148.23	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$272.41	2.00	2.00	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.32	20	\$0.86	15%	50%	\$297.14	79.68	79.81	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$297.14	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$297.14	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.06	20	\$0.81	45%	50%	\$9,999.00	8.91	8.93	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.12	20	\$0.81	45%	50%	\$9,999.00	-8.53	-8.54	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.81	45%	50%	\$9,999.00	-4.20	-4.20	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$2,620.31	-4.48	-4.49	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$2,620.31	11.24	11.25	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,620.31	5.54	5.54	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	14.93	18	\$0.59	15%	35%	\$1.39	23.32	23.36	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	27.41	18	\$0.59	15%	35%	\$1.39	21.62	21.63	Building Energy Simulation Tool

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Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.08	18	\$0.59	15%	35%	\$1.39	10.65	10.65	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.37	30	\$37.07	66%	66%	\$183.04	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	15.52	30	\$37.07	66%	66%	\$183.04	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.98	30	\$37.07	66%	66%	\$183.04	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	79.71	5	\$267.96	18%	75%	\$804.14	61.56	61.91	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.22	15	\$0.05	10%	15%	\$28.80	20.11	20.19	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.09	14	\$5.25	75%	75%	\$165.06	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.26	15%	20%	\$143.90	31.26	31.25	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	296.41	15	\$189.00	19%	25%	\$78.98	11.81	11.81	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	106.81	15	\$1,273.23	19%	25%	\$1,476.45	4.26	4.26	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.13	15	\$0.09	19%	25%	\$89.19	14.96	14.95	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	2%	56%	\$2,350.51	13.34	13.34	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.79	15	\$0.76	1%	19%	\$93.31	130.76	130.96	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.22	15	\$0.76	1%	19%	\$93.31	82.03	82.02	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,409.40	15	\$7,501.21	15%	15%	\$73.54	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,276.62	15	\$7,501.21	15%	15%	\$73.54	0.00	0.00	HVLS-Heating-AEG-1
Small Office	Cooling	RTU - Maintenance	tonCool	New	5.38	3	\$33.20	15%	45%	\$2,210.27	1.67	1.68	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	New	221.06	15	\$410.87	15%	45%	\$231.91	368.55	369.33	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	117.19	15	\$698.92	15%	75%	\$744.17	448.88	449.53	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	221.78	20	\$1,370.94	15%	75%	\$215.86	21.66	21.66	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	475.61	20	\$1,370.94	15%	75%	\$215.86	439.67	439.67	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$138.50	29.86	29.97	STAT_WIFI-AII-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.77	5	\$0.75	30%	40%	\$138.50	33.20	33.24	STAT_WIFI-AII-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.17	5	\$0.75	30%	40%	\$138.50	16.36	16.35	STAT_WIFI-AII-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	24.49	10	\$8.63	25%	65%	\$53.15	10.31	10.31	DHW_AER-Water Heating-ILTRM-v4.0-1

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Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	26.91	10	\$17.56	25%	65%	(\$595.95)	5.67	5.67	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	5.32	10	\$16.82	25%	65%	(\$1,000.70)	1.26	1.26	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	0%	0%	\$9.13	0.00	0.00	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	99.76	15	\$15.38	1%	75%	\$19.10	45.31	45.31	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	113.24	4	\$75.87	25%	40%	(\$512.14)	9.88	9.88	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	4.13	4.13	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Office	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,290.46	64.22	64.22	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.47	15	\$0.36	11%	23%	\$95.59	444.95	449.79	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.66	15	\$0.60	11%	23%	\$112.66	622.94	629.71	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	102.19	15	\$56.14	1%	3%	\$70.78	5.52	5.69	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.20	15	\$65.99	1%	3%	\$159.82	0.36	0.37	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,318.76	11	\$26.48	15%	30%	\$1.66	60.68	61.02	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	237.44	16	\$1,864.95	5%	15%	\$946.93	49.47	49.72	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.25	9	\$0.65	15%	25%	\$47.73	70.78	72.13	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	79.46	8	\$56.85	15%	25%	\$127.78	34.52	35.20	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	99.35	7	\$3,486.31	15%	30%	\$6,856.00	58.72	59.92	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	17.79	12	\$50.74	0%	0%	\$395.41	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.10	4	\$24.51	0%	0%	\$1,633.09	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.76	15	\$347.21	0%	0%	\$3,234.49	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	17.67	2	\$10.74	0%	0%	\$428.41	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.29	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	5.11	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	36.94	15	\$305.13	0%	0%	\$1,934.48	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	147.93	15	\$539.09	0%	0%	\$399.27	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	310.81	10	\$449.00	0%	0%	\$192.69	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	0.69	16	\$153.90	0%	0%	\$9,999.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

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Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	0.25	15	\$135.00	0%	0%	\$9,999.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	107.59	16	\$105.92	0%	0%	\$113.39	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	82.83	10	\$521.11	0%	0%	\$908.64	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.02	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	62.97	12	\$5,648.09	0%	0%	\$9,999.00	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.17	8	\$15.90	0%	0%	\$9,999.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.02	8	\$3.87	0%	0%	\$9,999.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.87	5	\$49.37	0%	0%	\$4,091.59	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,640.50	5	\$288.64	25%	75%	\$41.79	2.10	2.10	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,721.40	18	\$8,815.42	25%	50%	\$370.46	83.94	83.93	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	148.19	15	\$335.00	0%	0%	\$89.00	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	318.17	15	\$335.00	0%	0%	\$89.00	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	123.15	4	\$37.32	10%	50%	\$79.50	91.18	81.17	SMARTSTRIP-Electronics-RTF-v3.2-1

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Small Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.08	5	\$0.01	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$4.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$4.02	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$2.79	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	584.54	18	\$4,231.40	0%	0%	\$827.87	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.74	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	24.72	7	\$423.28	0%	0%	(\$3,584.17)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$3,584.17)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$3,584.17)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	3,796.00	15	\$1,114.41	0%	0%	\$304.41	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$304.41	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,550.71	6	\$37.07	1%	3%	\$5.00	17.28	17.28	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.04	20	\$0.38	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	New	0.62	25	\$4.24	10%	25%	\$97.67	173.77	174.01	ADVNC-AII-RSRCH-1
Small Office	Heating	Advanced New Construction Designs	sqft	New	1.36	25	\$4.24	10%	25%	\$97.67	193.15	193.25	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.30	25	\$4.24	10%	25%	\$97.67	95.17	95.16	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.25	25	\$4.24	10%	25%	\$97.67	46.72	46.72	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	1.70	25	\$4.24	10%	25%	\$97.67	2,024.20	2,049.28	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	25%	\$97.67	485.21	488.64	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.10	3%	14%	\$40.88	5.82	5.86	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	New	0.21	3	\$0.10	3%	14%	\$40.88	6.47	6.49	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.10	3%	14%	\$40.88	3.19	3.19	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.10	3%	14%	\$40.88	1.57	1.57	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.26	3	\$0.10	3%	14%	\$40.88	16.95	17.66	COM_SEM-Lighting-AEG-1

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Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.10	3%	14%	\$40.88	5.42	5.56	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.10	3%	14%	\$40.88	0.56	0.23	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.16	3	\$0.10	3%	14%	\$40.88	12.64	11.22	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	New	0.13	3	\$0.44	100%	100%	\$172.13	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	New	0.29	3	\$0.44	100%	100%	\$172.13	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	New	0.06	3	\$0.44	100%	100%	\$172.13	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.44	100%	100%	\$172.13	0.00	0.00	COM_CX-Water Heating-AEG-1
Small Office	Interior Lighting	Commissioning	sqft	New	0.30	3	\$0.44	100%	100%	\$172.13	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	New	0.10	3	\$0.44	100%	100%	\$172.13	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.44	100%	100%	\$172.13	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	New	0.13	3	\$0.14	0%	0%	\$54.64	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	New	0.29	3	\$0.14	0%	0%	\$54.64	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.14	0%	0%	\$54.64	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.14	0%	0%	\$54.64	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.30	3	\$0.14	0%	0%	\$54.64	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.10	3	\$0.14	0%	0%	\$54.64	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.14	0%	0%	\$54.64	0.00	0.00	COM_RCX-Refrigeration-AEG-1

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Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.21	10	\$0.09	0%	0%	\$64.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.02	10	\$1.12	0%	0%	\$4,378.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$8,442.64	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Miscellaneous	LED Signage	perBldg	New	106.71	16	\$75.53	20%	75%	\$85.15	15.73	15.73	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,932.50	25	\$4,511.54	0%	75%	\$165.34	108.15	108.15	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$73.27	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	1.11	45	\$0.84	15%	35%	\$73.27	93.11	93.32	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$73.27	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.15	20	\$0.86	15%	35%	\$636.05	36.38	37.29	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$636.05	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$636.05	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.76	20	\$0.81	45%	50%	\$9,999.00	29.68	30.42	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.74	20	\$0.81	45%	50%	\$9,999.00	-15.52	-15.55	Building Energy Simulation Tool

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Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.46	20	\$0.81	45%	50%	\$9,999.00	-19.93	-20.19	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.41	45	\$1.70	15%	35%	\$80.91	-63.68	-65.28	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.50	45	\$1.70	15%	35%	\$80.91	124.15	124.43	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.94	45	\$1.70	15%	35%	\$80.91	159.47	161.53	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.81	18	\$0.59	15%	25%	\$5.76	3.60	3.69	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	4.96	18	\$0.59	15%	25%	\$5.76	2.50	2.50	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	3.11	18	\$0.59	15%	25%	\$5.76	3.21	3.25	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.10	30	\$37.07	48%	48%	\$113.84	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	20.38	30	\$37.07	48%	48%	\$113.84	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.36	30	\$37.07	48%	48%	\$113.84	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	2,311.61	10	\$914.46	15%	75%	\$61.62	1.50	1.55	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	235.05	15	\$248.07	15%	75%	\$135.04	21.24	21.86	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	548.81	15	\$263.92	15%	75%	\$61.53	4.96	5.10	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	17.55	15	\$248.07	15%	75%	\$1,774.27	0.63	0.63	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	18,956.84	10	\$1,796.53	15%	75%	\$41.87	4.88	4.88	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	80.62	5	\$267.96	18%	75%	\$809.76	308.46	317.87	AEG-BEST

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Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.31	15	\$0.05	5%	15%	\$21.07	78.45	81.55	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.63	14	\$5.25	3%	75%	\$414.75	367.82	369.13	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.59	18	\$0.26	15%	20%	\$50.81	75.96	76.94	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,942.14	15	\$189.00	13%	25%	\$12.28	97.42	99.40	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	699.85	15	\$1,273.23	13%	50%	\$229.52	110.35	112.59	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.38	15	\$0.04	13%	50%	\$13.87	387.79	395.66	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	15%	43%	\$829.91	27.36	27.91	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.79	15	\$0.76	5%	14%	\$46.17	100.33	100.69	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.28	15	\$0.76	5%	14%	\$46.17	334.68	341.47	HVAC_DOAS-Heating-7PLN-v5-1
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,381.89	15	\$7,501.21	15%	30%	\$284.20	111.14	115.53	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.18	15	\$7,501.21	15%	30%	\$284.20	0.00	0.00	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	22.90	23.66	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	224.10	15	\$410.87	15%	45%	\$232.95	547.91	558.16	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	118.80	15	\$698.92	15%	75%	\$747.52	562.48	570.43	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	195.01	20	\$979.24	15%	25%	\$236.52	6.39	7.03	DHP-Cooling/Heating-7PLN-v2-1

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Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	278.85	20	\$979.24	15%	25%	\$236.52	122.77	122.77	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.49	5	\$0.75	30%	40%	\$102.49	116.06	118.98	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.79	5	\$0.75	30%	40%	\$102.49	99.03	99.26	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.49	5	\$0.75	30%	40%	\$102.49	127.21	128.85	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	281.78	10	\$8.63	25%	65%	\$4.84	24.00	25.15	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	309.63	10	\$17.56	25%	65%	(\$54.31)	13.18	13.82	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	61.18	10	\$16.82	25%	65%	(\$91.19)	2.57	2.68	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	626.58	11	\$37.97	0%	0%	\$9.24	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,145.90	15	\$15.38	16%	75%	\$1.74	59.43	61.95	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,302.70	4	\$75.87	25%	40%	(\$46.67)	41.08	42.83	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	101.18	2	\$5.13	15%	75%	\$26.64	32.30	33.67	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.82	20	\$258.33	1%	30%	\$2,319.72	102.86	107.22	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.71	15	\$0.36	3%	23%	\$66.14	494.41	511.94	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.00	15	\$0.60	3%	23%	\$77.95	692.18	716.71	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	571.92	15	\$56.14	1%	3%	\$13.48	13.68	15.16	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.64	15	\$65.99	1%	3%	\$172.10	0.51	0.56	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,879.36	11	\$26.48	15%	30%	\$0.83	192.52	203.78	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	499.64	16	\$1,864.95	5%	15%	\$473.80	131.42	139.11	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.46	9	\$0.65	15%	25%	\$48.34	116.78	131.05	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	87.10	8	\$56.85	15%	25%	\$129.02	62.07	69.65	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	108.91	7	\$3,486.31	15%	30%	\$6,922.66	116.41	130.64	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	98.00	12	\$50.74	4%	25%	\$75.04	9.45	9.73	RFG_ASH-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	23.46	4	\$24.51	4%	25%	\$306.68	1.32	1.34	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	159.11	15	\$347.21	0%	0%	\$289.06	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	120.12	2	\$10.74	4%	25%	\$69.96	0.59	0.86	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	3.94	15	\$508.61	2%	13%	\$9,999.00	39.36	41.72	RFG_HECOMP-Refrigeration-AEO15-4
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	69.11	15	\$5,552.98	2%	13%	\$9,999.00	57.57	61.02	RFG_HECOMP-Refrigeration-AEO15-4

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Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	499.75	15	\$305.13	4%	25%	\$172.88	33.31	35.30	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	2,001.36	15	\$539.09	2%	13%	\$35.68	50.02	53.02	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,204.90	10	\$449.00	0%	0%	\$17.22	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	220.17	16	\$153.90	4%	25%	\$89.53	6.37	6.72	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	79.18	15	\$135.00	2%	13%	\$224.92	0.29	0.30	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	839.97	16	\$105.92	4%	25%	\$17.06	3.05	3.35	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	646.62	10	\$521.11	4%	25%	\$136.71	2.35	2.58	RFG_DDEF-Refrigeration-VTTRM-1
Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	385.25	8	\$18,135.52	4%	25%	\$9,999.00	0.07	0.10	RFG_ADC-Refrigeration-PGE-R6-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	851.91	12	\$605.15	4%	25%	\$105.28	42.58	45.13	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	43.74	8	\$15.90	0%	0%	\$66.03	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.51	8	\$3.87	0%	0%	\$155.92	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	15.85	5	\$49.37	0%	0%	\$775.45	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,387.66	5	\$288.64	25%	75%	\$51.93	42.42	43.87	VEND_CTRL-Miscellaneous-SCE-17R0-46
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	7,850.82	18	\$8,815.42	25%	50%	\$130.80	204.01	206.64	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	184.43	15	\$335.00	0%	0%	\$96.85	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	262.48	15	\$335.00	0%	0%	\$96.85	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	16.08	4	\$37.32	10%	50%	\$615.19	41.94	37.80	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$4.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$4.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$29.86	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	16,862.98	18	\$4,231.40	0%	0%	\$29.23	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$5,294.26	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	284.34	7	\$423.28	0%	0%	(\$314.10)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	5.60	7	\$423.28	0%	0%	(\$314.10)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	5.60	7	\$423.28	0%	0%	(\$314.10)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	43,669.72	15	\$1,114.41	0%	0%	\$27.57	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	268.16	15	\$1,114.41	0%	0%	\$27.57	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	10,196.23	6	\$37.07	1%	3%	\$0.76	19.94	19.94	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.03	20	\$0.31	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.65	25	\$4.24	0%	0%	\$82.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.96	25	\$4.24	0%	0%	\$82.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.73	25	\$4.24	0%	0%	\$82.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.24	0%	0%	\$82.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	2.88	25	\$4.24	0%	0%	\$82.65	0.00	0.00	ADVNC-AII-RSRCH-1

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Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.40	25	\$4.24	0%	0%	\$82.65	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.10	0%	3%	\$42.15	10.20	10.60	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.10	0%	3%	\$42.15	8.70	8.73	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.10	0%	3%	\$42.15	11.18	11.41	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.10	0%	3%	\$42.15	2.31	2.40	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.25	3	\$0.10	0%	3%	\$42.15	18.63	20.39	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.10	0%	3%	\$42.15	3.46	3.88	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.10	0%	3%	\$42.15	2.54	2.41	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.10	0%	3%	\$42.15	2.06	1.86	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	Existing	0.19	3	\$0.57	0%	0%	\$191.92	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	Existing	0.30	3	\$0.57	0%	0%	\$191.92	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Ventilation	Commissioning	sqft	Existing	0.19	3	\$0.57	0%	0%	\$191.92	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.57	0%	0%	\$191.92	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.29	3	\$0.57	0%	0%	\$191.92	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.57	0%	0%	\$191.92	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.07	3	\$0.57	0%	0%	\$191.92	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.19	3	\$0.18	16%	69%	\$60.92	249.48	259.33	COM_RCX-HVAC-AEG-1

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Large Retail	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.18	16%	69%	\$60.92	212.88	213.64	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.19	3	\$0.18	16%	69%	\$60.92	273.44	279.00	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.18	16%	69%	\$60.92	18.80	19.59	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.29	3	\$0.18	16%	69%	\$60.92	379.80	415.65	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.18	16%	69%	\$60.92	70.45	79.05	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.07	3	\$0.18	16%	69%	\$60.92	103.45	98.31	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.20	10	\$0.09	0%	0%	\$72.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.20	10	\$1.12	0%	0%	\$837.73	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.24	0%	0%	\$1,615.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.10	10	\$3.24	0%	0%	\$4,967.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$5,390.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	Existing	139.26	16	\$75.53	20%	75%	\$65.25	3.27	3.27	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	15,312.26	25	\$25,316.06	0%	0%	\$182.78	0.00	0.00	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$104.69	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	0.77	45	\$0.84	15%	50%	\$104.69	34.28	34.28	Building Energy Simulation Tool

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Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$104.69	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.18	20	\$0.86	15%	25%	\$540.73	6.55	6.56	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$540.73	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$540.73	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.14	20	\$0.81	45%	50%	\$9,999.00	1.68	1.69	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.21	20	\$0.81	45%	50%	\$9,999.00	-1.35	-1.35	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.16	20	\$0.81	45%	50%	\$9,999.00	-2.17	-2.17	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$165.68	-1.50	-1.50	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.57	45	\$1.70	15%	50%	\$165.68	24.88	24.88	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.43	45	\$1.70	15%	50%	\$165.68	39.89	39.89	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	6.72	18	\$0.59	15%	25%	\$2.94	1.93	1.93	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	9.18	18	\$0.59	15%	25%	\$2.94	1.35	1.35	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	7.00	18	\$0.59	15%	25%	\$2.94	2.16	2.16	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.53	30	\$37.07	66%	66%	\$152.47	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	14.22	30	\$37.07	66%	66%	\$152.47	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.25	30	\$37.07	66%	66%	\$152.47	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,859.03	10	\$914.46	15%	75%	\$73.44	0.19	0.18	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	189.03	15	\$248.07	15%	75%	\$160.93	3.26	3.24	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	441.36	15	\$263.92	15%	75%	\$73.33	0.76	0.76	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	14.05	15	\$248.07	15%	75%	\$2,131.58	0.09	0.09	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	15,036.57	10	\$1,796.53	15%	75%	\$50.79	0.58	0.58	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	59.62	5	\$267.96	18%	75%	\$1,074.46	20.07	20.17	AEG-BEST
Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.23	15	\$0.05	10%	15%	\$27.61	5.48	5.50	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.14	14	\$5.25	75%	75%	\$592.65	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.50	18	\$0.26	15%	20%	\$58.72	19.28	19.28	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,901.24	15	\$189.00	19%	25%	\$12.31	7.27	7.27	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	685.12	15	\$1,273.23	19%	50%	\$230.21	14.44	14.44	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.32	15	\$0.04	19%	50%	\$13.91	50.74	50.74	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	15%	43%	\$959.16	4.30	4.30	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	5%	14%	\$84.73	12.88	12.89	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.55	15	\$0.76	5%	14%	\$84.73	26.69	26.68	HVAC_DOAS-Heating-7PLN-v5-1

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Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,510.78	15	\$7,501.21	15%	30%	\$372.44	15.53	15.59	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.13	15	\$7,501.21	15%	30%	\$372.44	0.00	0.00	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	New	6.37	3	\$33.20	15%	45%	\$1,865.82	0.84	0.85	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	New	165.46	15	\$410.87	15%	45%	\$309.76	117.74	117.98	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	87.71	15	\$698.92	15%	75%	\$993.98	143.55	143.75	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	140.16	20	\$979.24	15%	25%	\$318.91	1.21	1.21	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	197.01	20	\$979.24	15%	25%	\$318.91	19.18	19.18	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.37	5	\$0.75	30%	40%	\$134.33	8.16	8.19	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.55	5	\$0.75	30%	40%	\$134.33	6.27	6.27	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	30%	40%	\$134.33	10.05	10.05	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	86.55	10	\$8.63	25%	65%	\$15.19	2.96	2.98	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	95.10	10	\$17.56	25%	65%	(\$170.33)	1.62	1.64	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	18.79	10	\$16.82	25%	65%	(\$286.02)	0.36	0.36	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	577.36	11	\$37.97	0%	0%	\$9.66	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,055.89	15	\$15.38	1%	75%	\$1.82	12.96	13.05	AEG-BEST

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Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	400.12	4	\$75.87	25%	40%	(\$146.38)	2.83	2.85	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	93.23	2	\$5.13	15%	75%	\$27.85	1.18	1.19	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	11.81	20	\$258.33	1%	30%	\$2,425.28	18.40	18.51	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.74	15	\$0.36	11%	23%	\$61.04	176.02	177.75	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.03	15	\$0.60	11%	23%	\$71.94	246.43	248.85	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	555.58	15	\$56.14	1%	3%	\$13.29	2.21	2.29	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.29	15	\$65.99	1%	3%	\$162.92	0.08	0.08	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,517.49	11	\$26.48	15%	30%	\$0.86	29.47	29.83	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	462.58	16	\$1,864.95	5%	15%	\$487.30	24.03	24.30	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.70	9	\$0.65	15%	25%	\$66.94	11.77	12.39	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	60.19	8	\$56.85	15%	25%	\$178.67	5.74	6.05	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	75.26	7	\$3,486.31	15%	30%	\$9,586.60	9.76	10.31	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	92.26	12	\$50.74	4%	25%	\$76.23	1.52	1.52	RFG_ASH-Refrigeration-7PLN-v6-1

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Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	21.49	4	\$24.51	4%	25%	\$319.80	0.09	0.09	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	149.62	15	\$347.21	0%	0%	\$292.97	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	100.65	2	\$10.74	4%	25%	\$78.97	0.02	0.03	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	3.70	15	\$508.61	2%	13%	\$9,999.00	7.05	7.20	RFG_HECOMP-Refrigeration-AEO17-3
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	64.98	15	\$5,552.98	2%	13%	\$9,999.00	10.32	10.54	RFG_HECOMP-Refrigeration-AEO17-5
Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	469.94	15	\$305.13	4%	25%	\$175.22	5.97	6.10	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,881.99	15	\$539.09	2%	13%	\$36.16	8.96	9.16	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	3,954.09	10	\$449.00	0%	0%	\$17.45	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	205.97	16	\$153.90	4%	25%	\$91.39	1.17	1.19	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	74.07	15	\$135.00	2%	13%	\$229.58	0.05	0.05	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	712.98	16	\$105.92	4%	25%	\$19.08	0.57	0.56	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	548.86	10	\$521.11	4%	25%	\$152.87	0.33	0.33	RFG_DDEF-Refrigeration-VTTRM-1

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Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	11.53	8	\$647.70	4%	25%	\$9,999.00	0.01	0.01	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	801.09	12	\$5,648.09	4%	25%	\$995.91	6.85	7.01	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	41.05	8	\$15.90	0%	0%	\$67.16	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.23	8	\$3.87	0%	0%	\$158.58	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	14.87	5	\$49.37	0%	0%	\$788.82	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,295.61	5	\$288.64	25%	75%	\$52.92	3.48	3.48	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	6,669.84	18	\$8,815.42	25%	50%	\$151.17	51.78	51.78	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	132.56	15	\$335.00	0%	0%	\$130.28	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	186.04	15	\$335.00	0%	0%	\$130.28	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	28.68	4	\$37.32	10%	50%	\$344.38	5.24	4.73	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$13.74	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$13.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$13.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$17.30	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	14,326.33	18	\$4,231.40	0%	0%	\$33.78	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$5,183.43	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	262.01	7	\$423.28	0%	0%	(\$327.93)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	5.36	7	\$423.28	0%	0%	(\$327.93)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	5.36	7	\$423.28	0%	0%	(\$327.93)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	40,239.62	15	\$1,114.41	0%	0%	\$28.82	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	248.16	15	\$1,114.41	0%	0%	\$28.82	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,398.74	6	\$37.07	1%	3%	\$2.28	2.87	2.87	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.03	20	\$0.28	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	0.64	25	\$4.24	10%	30%	\$79.77	63.78	63.86	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	New	0.96	25	\$4.24	10%	30%	\$79.77	48.98	48.99	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.73	25	\$4.24	10%	30%	\$79.77	78.55	78.55	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$79.77	18.03	18.07	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	2.92	25	\$4.24	10%	30%	\$79.77	1,148.89	1,162.99	ADVNC-AII-RSRCH-1
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.40	25	\$4.24	10%	30%	\$79.77	114.47	116.59	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.13	0%	3%	\$47.10	0.43	0.43	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.13	0%	3%	\$47.10	0.33	0.33	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.13	0%	3%	\$47.10	0.53	0.53	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.13	0%	3%	\$47.10	0.12	0.12	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.45	3	\$0.13	0%	3%	\$47.10	1.95	2.05	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.13	0%	3%	\$47.10	0.26	0.28	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.05	3	\$0.13	0%	3%	\$47.10	0.24	0.23	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.13	0%	3%	\$47.10	0.20	0.18	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	New	0.14	3	\$0.66	100%	100%	\$195.83	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	New	0.21	3	\$0.66	100%	100%	\$195.83	0.00	0.00	COM_CX-HVAC-AEG-1

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Large Retail	Ventilation	Commissioning	sqft	New	0.16	3	\$0.66	100%	100%	\$195.83	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.66	100%	100%	\$195.83	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	New	0.52	3	\$0.66	100%	100%	\$195.83	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$0.66	100%	100%	\$195.83	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	New	0.11	3	\$0.66	100%	100%	\$195.83	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	New	0.14	3	\$0.21	0%	0%	\$62.16	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Heating	Retrocommissioning	sqft	New	0.21	3	\$0.21	0%	0%	\$62.16	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.16	3	\$0.21	0%	0%	\$62.16	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.21	0%	0%	\$62.16	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.52	3	\$0.21	0%	0%	\$62.16	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.21	0%	0%	\$62.16	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.11	3	\$0.21	0%	0%	\$62.16	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.36	10	\$0.09	0%	0%	\$38.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.34	10	\$1.12	0%	0%	\$475.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.09	3	\$0.24	0%	0%	\$915.96	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.17	10	\$3.24	0%	0%	\$2,816.82	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.03	10	\$0.70	0%	0%	\$3,056.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	New	139.26	16	\$75.53	20%	75%	\$65.25	0.52	0.52	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	16,296.72	25	\$25,071.88	0%	0%	\$165.34	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.15	45	\$0.84	15%	35%	\$132.03	172.28	178.28	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.43	45	\$0.84	15%	35%	\$132.03	176.83	182.59	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$132.03	68.43	69.15	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.32	20	\$0.86	15%	50%	\$311.93	158.41	163.92	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$311.93	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$311.93	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.34	20	\$0.81	45%	50%	\$9,999.00	97.94	101.35	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.29	20	\$0.81	45%	50%	\$9,999.00	-29.47	-30.43	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$9,999.00	-20.11	-20.32	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.07	45	\$1.70	15%	35%	\$74.61	-24.08	-24.91	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.93	45	\$1.70	15%	35%	\$74.61	235.78	243.46	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.41	45	\$1.70	15%	35%	\$74.61	160.89	162.58	Building Energy Simulation Tool

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Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	4.30	18	\$0.59	15%	50%	\$9,999.00	34.20	35.39	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.43	18	\$0.59	15%	50%	\$9,999.00	-15.46	-15.96	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.16	18	\$0.59	15%	50%	\$9,999.00	-10.55	-10.66	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.46	30	\$37.07	48%	48%	\$123.87	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	22.75	30	\$37.07	48%	48%	\$123.87	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.80	30	\$37.07	48%	48%	\$123.87	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	91.65	5	\$267.96	18%	75%	\$712.19	724.36	746.47	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.34	15	\$0.05	5%	15%	\$19.10	211.24	222.75	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.92	14	\$5.25	3%	75%	\$366.77	698.53	733.96	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.24	18	\$0.26	15%	20%	\$126.38	76.64	77.44	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	752.90	15	\$189.00	13%	25%	\$31.56	98.29	99.91	VENT_PMSM-Ventilation-AEG-2016-2

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Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	271.31	15	\$1,273.23	13%	25%	\$590.09	35.42	36.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.15	15	\$0.04	13%	25%	\$35.65	124.47	126.52	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	1%	33%	\$2,064.35	31.05	31.57	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.93	15	\$0.76	0%	11%	\$67.70	214.40	225.27	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.51	15	\$0.76	0%	11%	\$67.70	379.92	386.19	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,775.55	15	\$7,501.21	15%	15%	\$60.39	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,300.29	15	\$7,501.21	15%	15%	\$60.39	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	48.39	49.99	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	254.18	15	\$410.87	15%	45%	\$205.39	1,313.18	1,337.76	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	134.75	15	\$698.92	15%	75%	\$659.07	1,348.11	1,367.16	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	197.32	20	\$979.24	15%	75%	\$180.01	66.10	72.68	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	419.50	20	\$979.24	15%	75%	\$180.01	678.27	678.27	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.55	5	\$0.75	30%	40%	\$111.27	312.51	323.39	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.92	5	\$0.75	30%	40%	\$111.27	188.08	194.20	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.20	5	\$0.75	30%	40%	\$111.27	128.34	129.68	STAT_WIFI-AII-7PLN-v2-1

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Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	38.05	10	\$8.63	25%	65%	\$35.87	50.99	53.46	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	41.81	10	\$17.56	25%	65%	(\$402.19)	28.02	29.37	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	8.26	10	\$16.82	25%	65%	(\$675.35)	5.47	5.70	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	626.58	11	\$37.97	0%	0%	\$9.24	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	154.64	15	\$15.38	16%	75%	\$12.92	126.23	131.59	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	175.90	4	\$75.87	25%	40%	(\$345.63)	87.31	91.02	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	101.18	2	\$5.13	15%	75%	\$26.64	68.65	71.56	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.82	20	\$258.33	1%	30%	\$2,319.54	218.62	227.89	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.47	15	\$0.36	3%	23%	\$100.21	817.07	846.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.66	15	\$0.60	3%	23%	\$118.10	1,143.89	1,184.44	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	169.86	15	\$56.14	1%	3%	\$45.38	22.61	25.06	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.64	15	\$65.99	1%	3%	\$172.10	1.21	1.34	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,220.38	11	\$26.48	15%	30%	\$1.26	318.15	336.77	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	329.76	16	\$1,864.95	5%	15%	\$717.88	217.19	229.90	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.46	9	\$0.65	15%	25%	\$48.34	292.40	328.13	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	87.10	8	\$56.85	15%	25%	\$129.02	155.41	174.40	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	108.91	7	\$3,486.31	15%	30%	\$6,922.66	291.49	327.11	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	8.77	12	\$50.74	4%	25%	\$835.80	1.29	1.32	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	2.37	4	\$24.51	4%	25%	\$2,932.24	0.44	0.44	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	12.25	15	\$347.21	0%	0%	\$3,848.79	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	10.57	2	\$10.74	4%	25%	\$748.22	0.64	0.83	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.30	15	\$508.61	2%	13%	\$9,999.00	7.14	7.69	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.32	15	\$5,552.98	2%	13%	\$9,999.00	10.44	11.25	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	38.48	15	\$305.13	4%	25%	\$2,301.88	6.04	6.51	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	154.10	15	\$539.09	2%	13%	\$475.10	9.07	9.77	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	323.76	10	\$449.00	0%	0%	\$229.29	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	19.62	16	\$153.90	4%	25%	\$1,067.90	0.94	1.05	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	7.06	15	\$135.00	2%	13%	\$2,682.79	0.04	0.05	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	70.43	16	\$105.92	4%	25%	\$186.31	2.62	2.74	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	54.22	10	\$521.11	4%	25%	\$1,492.97	2.02	2.11	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	33.89	8	\$18,135.52	4%	25%	\$9,999.00	0.07	0.09	RFG_ADC-Refrigeration-PGE-R6-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	65.59	12	\$605.15	4%	25%	\$1,401.79	7.72	8.32	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	3.91	8	\$15.90	0%	0%	\$735.65	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.40	8	\$3.87	0%	0%	\$1,737.08	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	1.42	5	\$49.37	0%	0%	\$8,639.16	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,444.69	5	\$288.64	25%	75%	\$49.55	10.58	10.81	VEND_CTRL-Miscellaneous-SCE-17R0-47
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,145.71	18	\$8,815.42	25%	50%	\$325.36	205.83	207.98	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	189.29	15	\$335.00	0%	0%	\$74.47	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	387.47	15	\$335.00	0%	0%	\$74.47	0.00	0.00	AEG - BEST

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Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	10.09	4	\$37.32	10%	50%	\$929.80	72.58	60.97	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$14.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,013.51	18	\$4,231.40	0%	0%	\$484.72	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$5,988.71	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	38.39	7	\$423.28	0%	0%	(\$2,418.89)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$2,418.89)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$2,418.89)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	5,896.53	15	\$1,114.41	0%	0%	\$205.44	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$205.44	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,129.04	6	\$37.07	1%	3%	\$6.86	36.85	36.85	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.20	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	0.74	25	\$4.24	0%	0%	\$107.76	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.97	25	\$4.24	0%	0%	\$107.76	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.30	25	\$4.24	0%	0%	\$107.76	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.24	0%	0%	\$107.76	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.90	25	\$4.24	0%	0%	\$107.76	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.40	25	\$4.24	0%	0%	\$107.76	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.15	3	\$0.07	0%	3%	\$35.56	27.46	28.96	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.07	0%	3%	\$35.56	16.53	17.37	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.07	0%	3%	\$35.56	11.28	11.46	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.07	0%	3%	\$35.56	4.90	5.11	COM_SEM-Water Heating-AEG-1

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Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.17	3	\$0.07	0%	3%	\$35.56	30.79	33.70	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.07	0%	3%	\$35.56	8.65	9.71	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.07	0%	3%	\$35.56	0.74	0.44	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.07	0%	3%	\$35.56	3.56	2.99	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	Existing	0.21	3	\$0.43	0%	0%	\$180.56	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	Existing	0.35	3	\$0.43	0%	0%	\$180.56	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.43	0%	0%	\$180.56	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.43	0%	0%	\$180.56	0.00	0.00	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.19	3	\$0.43	0%	0%	\$180.56	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.43	0%	0%	\$180.56	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.43	0%	0%	\$180.56	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.21	3	\$0.14	16%	69%	\$57.32	671.75	708.34	COM_RCX-HVAC-AEG-1
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.35	3	\$0.14	16%	69%	\$57.32	404.28	424.79	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.14	16%	69%	\$57.32	275.87	280.42	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.14	16%	69%	\$57.32	39.95	41.64	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.19	3	\$0.14	16%	69%	\$57.32	627.66	686.90	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.14	16%	69%	\$57.32	176.39	197.95	COM_RCX-Lighting-AEG-1

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Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.14	16%	69%	\$57.32	30.08	18.12	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$109.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,422.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	Existing	139.26	16	\$75.53	20%	75%	\$65.25	54.54	54.54	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,996.54	25	\$3,300.91	0%	0%	\$182.78	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$308.34	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.26	45	\$0.84	15%	50%	\$308.34	59.04	59.10	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$308.34	3.54	3.54	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.41	20	\$0.86	15%	50%	\$175.18	66.24	66.35	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.10	20	\$0.86	15%	50%	\$175.18	5.68	5.68	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.03	20	\$0.86	15%	50%	\$175.18	5.41	5.41	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.81	45%	50%	\$9,999.00	8.33	8.35	Building Energy Simulation Tool

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Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.81	45%	50%	\$9,999.00	-2.31	-2.31	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-2.20	-2.20	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$514.15	-0.35	-0.35	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.24	45	\$1.70	15%	50%	\$514.15	16.75	16.77	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.08	45	\$1.70	15%	50%	\$514.15	15.97	15.97	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	3.44	18	\$0.59	15%	50%	\$3.68	8.50	8.51	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	11.37	18	\$0.59	15%	50%	\$3.68	10.03	10.04	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.54	18	\$0.59	15%	50%	\$3.68	9.56	9.56	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.86	30	\$37.07	66%	66%	\$183.66	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	13.54	30	\$37.07	66%	66%	\$183.66	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.43	30	\$37.07	66%	66%	\$183.66	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Small Retail	Cooling	HVAC - Economizer	HP cool	New	68.43	5	\$267.96	18%	75%	\$936.50	47.55	47.81	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.26	15	\$0.05	10%	15%	\$24.45	15.24	15.30	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.14	14	\$5.25	75%	75%	\$593.25	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.26	15%	20%	\$143.58	19.74	19.74	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	699.76	15	\$189.00	19%	25%	\$33.46	7.44	7.44	VENT_PMSM-Ventilation-AEG-2016-2
Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	252.16	15	\$1,273.23	19%	25%	\$625.50	2.68	2.68	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.13	15	\$0.04	19%	25%	\$37.79	9.43	9.43	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	1%	33%	\$2,345.25	4.95	4.95	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	0%	11%	\$119.99	24.97	25.03	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.23	15	\$0.76	0%	11%	\$119.99	30.75	30.75	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,837.48	15	\$7,501.21	15%	15%	\$91.99	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,320.73	15	\$7,501.21	15%	15%	\$91.99	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	New	6.45	3	\$33.20	15%	45%	\$1,845.16	1.80	1.82	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	New	189.77	15	\$410.87	15%	45%	\$270.08	285.34	285.93	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	100.60	15	\$698.92	15%	75%	\$866.66	347.90	348.39	RTU_PREC-Cooling-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	139.79	20	\$979.24	15%	75%	\$257.70	12.30	12.30	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	277.47	20	\$979.24	15%	75%	\$257.70	99.20	99.20	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.41	5	\$0.75	30%	40%	\$158.22	22.69	22.77	STAT_WIFI-All-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.55	5	\$0.75	30%	40%	\$158.22	10.80	10.82	STAT_WIFI-All-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.17	5	\$0.75	30%	40%	\$158.22	10.29	10.29	STAT_WIFI-All-7PLN-v2-1
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	35.06	10	\$8.63	25%	65%	\$37.50	6.28	6.33	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	38.52	10	\$17.56	25%	65%	(\$420.49)	3.45	3.48	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	7.61	10	\$16.82	25%	65%	(\$706.08)	0.77	0.78	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	577.36	11	\$37.97	0%	0%	\$9.66	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	142.49	15	\$15.38	1%	75%	\$13.51	27.54	27.71	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	162.08	4	\$75.87	25%	40%	(\$361.36)	6.01	6.07	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	93.23	2	\$5.13	15%	75%	\$27.85	2.51	2.54	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	11.81	20	\$258.33	1%	30%	\$2,425.09	39.10	39.34	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.49	15	\$0.36	11%	23%	\$92.48	290.89	293.75	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.68	15	\$0.60	11%	23%	\$109.00	407.25	411.25	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	165.01	15	\$56.14	1%	3%	\$44.76	3.65	3.78	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.29	15	\$65.99	1%	3%	\$162.92	0.20	0.20	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,981.54	11	\$26.48	15%	30%	\$1.30	48.70	49.29	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	305.31	16	\$1,864.95	5%	15%	\$738.33	39.71	40.17	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.70	9	\$0.65	15%	25%	\$66.94	29.47	31.02	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	60.19	8	\$56.85	15%	25%	\$178.67	14.37	15.15	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	75.26	7	\$3,486.31	15%	30%	\$9,586.60	24.44	25.82	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	8.31	12	\$50.74	4%	25%	\$846.69	0.19	0.19	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	1.93	4	\$24.51	4%	25%	\$3,451.51	0.03	0.03	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.50	15	\$347.21	0%	0%	\$3,966.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	8.26	2	\$10.74	4%	25%	\$916.99	0.02	0.03	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.28	15	\$508.61	2%	13%	\$9,999.00	1.21	1.26	RFG_HECOMP-Refrigeration-AEO17-3
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	5.00	15	\$5,552.98	2%	13%	\$9,999.00	1.77	1.85	RFG_HECOMP-Refrigeration-AEO17-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	36.12	15	\$305.13	4%	25%	\$2,372.11	1.02	1.07	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	144.67	15	\$539.09	2%	13%	\$489.59	1.54	1.60	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	303.94	10	\$449.00	0%	0%	\$236.28	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	18.16	16	\$153.90	4%	25%	\$1,121.03	0.17	0.18	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	6.53	15	\$135.00	2%	13%	\$2,816.27	0.01	0.01	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	50.69	16	\$105.92	4%	25%	\$249.29	0.43	0.41	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	39.02	10	\$521.11	4%	25%	\$1,997.65	0.25	0.24	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	0.95	8	\$647.70	4%	25%	\$9,999.00	0.01	0.01	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	61.58	12	\$5,648.09	4%	25%	\$9,999.00	1.15	1.21	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	3.70	8	\$15.90	0%	0%	\$745.93	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.38	8	\$3.87	0%	0%	\$1,761.35	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1.34	5	\$49.37	0%	0%	\$8,761.29	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,365.95	5	\$288.64	25%	75%	\$50.19	0.68	0.68	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,727.91	18	\$8,815.42	25%	50%	\$369.63	53.03	53.02	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	134.10	15	\$335.00	0%	0%	\$105.80	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	258.21	15	\$335.00	0%	0%	\$105.80	0.00	0.00	AEG - BEST
Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	17.80	4	\$37.32	10%	50%	\$537.17	8.65	7.42	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$6.52	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$6.52	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$6.52	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$8.80	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	878.90	18	\$4,231.40	0%	0%	\$550.68	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$5,836.87	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	35.38	7	\$423.28	0%	0%	(\$2,528.96)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$2,528.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$2,528.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	5,433.38	15	\$1,114.41	0%	0%	\$214.79	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$214.79	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,129.04	6	\$37.07	1%	3%	\$6.86	5.30	5.30	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.18	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	0.73	25	\$4.24	10%	25%	\$103.57	133.00	133.18	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	New	0.97	25	\$4.24	10%	25%	\$103.57	63.28	63.33	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.30	25	\$4.24	10%	25%	\$103.57	60.33	60.33	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.24	25	\$4.24	10%	25%	\$103.57	28.74	28.81	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.92	25	\$4.24	10%	25%	\$103.57	1,423.99	1,441.47	ADVNC-AII-RSRCH-1

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Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.40	25	\$4.24	10%	25%	\$103.57	214.97	218.95	ADVNC-AII-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.07	0%	3%	\$34.90	1.20	1.21	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.07	0%	3%	\$34.90	0.57	0.57	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.05	3	\$0.07	0%	3%	\$34.90	0.55	0.54	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.07	0%	3%	\$34.90	0.26	0.26	COM_SEM-Water Heating-AEG-1
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.30	3	\$0.07	0%	3%	\$34.90	3.22	3.38	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.07	0%	3%	\$34.90	0.65	0.69	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.07	0%	3%	\$34.90	0.06	0.03	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.07	0%	3%	\$34.90	0.33	0.28	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	New	0.16	3	\$0.40	100%	100%	\$168.43	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	New	0.21	3	\$0.40	100%	100%	\$168.43	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	New	0.06	3	\$0.40	100%	100%	\$168.43	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.40	100%	100%	\$168.43	0.00	0.00	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	New	0.34	3	\$0.40	100%	100%	\$168.43	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$0.40	100%	100%	\$168.43	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.40	100%	100%	\$168.43	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	New	0.16	3	\$0.13	0%	0%	\$53.47	0.00	0.00	COM_RCX-HVAC-AEG-1

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Small Retail	Heating	Retrocommissioning	sqft	New	0.21	3	\$0.13	0%	0%	\$53.47	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.13	0%	0%	\$53.47	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.13	0%	0%	\$53.47	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.34	3	\$0.13	0%	0%	\$53.47	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.13	0%	0%	\$53.47	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.13	0%	0%	\$53.47	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.24	10	\$0.09	0%	0%	\$58.53	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.02	10	\$1.12	0%	0%	\$6,474.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	New	139.26	16	\$75.53	20%	75%	\$65.25	8.61	8.61	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,135.09	25	\$3,284.75	0%	0%	\$165.34	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$241.95	4.62	4.75	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.32	45	\$0.84	15%	35%	\$241.95	25.23	25.52	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$241.95	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	35%	\$4,926.25	1.10	1.13	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$4,926.25	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$4,926.25	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.14	20	\$0.81	45%	50%	\$9,999.00	7.91	8.13	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.19	20	\$0.81	45%	50%	\$9,999.00	-3.75	-3.79	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.09	20	\$0.81	45%	50%	\$9,999.00	-5.69	-5.73	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.25	45	\$1.70	15%	35%	\$272.88	-32.80	-33.71	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.58	45	\$1.70	15%	35%	\$272.88	27.54	27.85	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.27	45	\$1.70	15%	35%	\$272.88	41.76	42.02	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.04	18	\$0.59	15%	50%	\$9,999.00	-4.46	-4.59	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.31	18	\$0.59	15%	50%	\$9,999.00	-4.98	-5.04	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.92	18	\$0.59	15%	50%	\$9,999.00	-7.55	-7.60	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.02	30	\$37.07	48%	48%	\$246.09	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.29	30	\$37.07	48%	48%	\$246.09	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.48	30	\$37.07	48%	48%	\$246.09	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	70.60	5	\$267.96	18%	75%	\$924.56	170.71	175.89	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.39	15	\$0.05	5%	15%	\$16.90	45.68	47.68	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.46	14	\$5.25	3%	75%	\$1,479.27	99.68	101.46	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.38	18	\$0.26	15%	20%	\$78.79	24.30	24.45	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	285.94	15	\$189.00	13%	25%	\$82.62	31.17	31.47	VENT_PMSM-Ventilation-AEG-2016-2
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	103.04	15	\$1,273.23	13%	50%	\$1,544.56	35.30	35.65	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.24	15	\$0.18	13%	50%	\$93.31	124.06	125.28	FAN_VSD-Ventilation-MIDATL-v3.0-13
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	10%	44%	\$1,287.03	10.49	10.60	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.68	15	\$0.76	3%	15%	\$63.69	32.60	33.18	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.82	15	\$0.76	3%	15%	\$63.69	128.37	129.64	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,232.49	15	\$7,501.21	15%	15%	\$71.66	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,042.42	15	\$7,501.21	15%	15%	\$71.66	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.46	14.80	15.29	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	Existing	195.80	15	\$410.87	15%	45%	\$266.64	309.47	315.22	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	103.80	15	\$698.92	15%	75%	\$855.61	317.70	322.15	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	170.41	20	\$685.47	15%	75%	\$226.09	18.12	19.93	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	179.32	20	\$685.47	15%	75%	\$226.09	14.65	14.65	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.62	5	\$0.75	30%	40%	\$113.51	67.58	69.46	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.68	5	\$0.75	30%	40%	\$113.51	26.84	27.14	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.31	5	\$0.75	30%	40%	\$113.51	40.70	40.95	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	115.62	10	\$8.63	25%	65%	\$11.79	78.18	81.84	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	127.04	10	\$17.56	25%	65%	(\$132.17)	42.95	44.96	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	25.10	10	\$16.82	25%	65%	(\$221.93)	8.38	8.73	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	627.04	11	\$37.97	0%	0%	\$9.22	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	470.17	15	\$15.38	16%	75%	\$4.24	193.63	201.58	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	534.51	4	\$75.87	25%	40%	(\$113.58)	133.86	139.35	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	101.25	2	\$5.13	15%	75%	\$26.58	105.24	109.56	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.83	20	\$258.33	1%	30%	\$2,315.32	335.05	348.80	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.68	15	\$0.36	3%	23%	\$69.83	227.24	238.99	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.96	15	\$0.60	3%	23%	\$82.30	318.14	334.59	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	111.67	15	\$56.14	1%	3%	\$71.62	7.55	8.68	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.59	15	\$65.99	1%	3%	\$178.73	0.28	0.32	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,033.95	11	\$26.48	15%	30%	\$1.34	58.90	62.47	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	310.67	16	\$1,864.95	5%	15%	\$762.53	40.21	42.65	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.64	9	\$0.65	15%	25%	\$68.59	150.37	163.20	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	93.64	8	\$56.85	15%	25%	\$114.00	79.92	86.74	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	117.09	7	\$3,486.31	15%	30%	\$6,116.55	149.90	162.69	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	102.68	12	\$50.74	11%	75%	\$71.38	23.77	24.30	RFG_ASH-Refrigeration-7PLN-v6-1

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Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	84.68	4	\$24.51	5%	35%	\$123.80	27.64	44.42	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	118.28	15	\$347.21	0%	0%	\$447.02	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	136.81	2	\$10.74	11%	75%	\$60.72	231.76	388.46	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	2.93	15	\$508.61	6%	38%	\$9,999.00	642.60	776.03	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	51.37	15	\$5,552.98	6%	38%	\$9,999.00	939.89	1,135.04	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	371.49	15	\$305.13	11%	75%	\$267.35	543.76	656.66	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,487.72	15	\$539.09	6%	38%	\$55.18	816.60	986.16	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	3,125.73	10	\$449.00	0%	0%	\$26.63	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	271.39	16	\$153.90	11%	75%	\$98.22	68.61	100.91	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	97.60	15	\$135.00	6%	38%	\$246.76	3.08	4.54	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,323.35	16	\$105.92	11%	75%	\$8.32	501.05	805.70	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,788.54	10	\$521.11	11%	75%	\$66.69	385.71	620.23	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	438.78	8	\$18,135.52	5%	35%	\$9,999.00	12.39	20.76	RFG_ADC-Refrigeration-PGE-R6-1

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Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	633.27	12	\$605.15	5%	35%	\$162.81	324.42	391.79	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	45.82	8	\$15.90	0%	0%	\$62.83	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.72	8	\$3.87	0%	0%	\$148.36	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	16.60	5	\$49.37	0%	0%	\$737.84	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,370.65	5	\$288.64	25%	75%	\$52.58	356.42	368.72	VEND_CTRL-Miscellaneous-SCE-17R0-44
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,015.75	18	\$8,815.42	25%	50%	\$202.85	65.27	65.68	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	221.40	15	\$335.00	0%	0%	\$105.50	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	196.90	15	\$335.00	0%	0%	\$105.50	0.00	0.00	AEG - BEST
Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	23.98	4	\$37.32	10%	50%	\$379.73	35.81	28.97	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.01	0%	0%	\$18.29	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$4.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.64	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$4.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$7.46	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	592.54	18	\$4,231.40	0%	0%	\$824.19	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.04	10	\$1.71	0%	0%	\$8,117.37	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	116.67	7	\$423.28	0%	0%	(\$794.90)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$794.90)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$794.90)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	17,918.07	15	\$1,114.41	0%	0%	\$67.51	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$67.51	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,545.55	6	\$37.07	1%	3%	\$5.01	27.09	27.09	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.08	20	\$0.81	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	0.82	25	\$4.24	0%	0%	\$52.21	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.14	25	\$4.24	0%	0%	\$52.21	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.24	0%	0%	\$52.21	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	1.99	25	\$4.24	0%	0%	\$52.21	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	3.59	25	\$4.24	0%	0%	\$52.21	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	1.40	25	\$4.24	0%	0%	\$52.21	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.17	3	\$0.34	0%	0%	\$80.70	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.34	0%	0%	\$80.70	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.34	0%	0%	\$80.70	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.33	3	\$0.34	0%	0%	\$80.70	0.00	0.00	COM_SEM-Water Heating-AEG-1
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.30	3	\$0.34	0%	0%	\$80.70	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.34	0%	0%	\$80.70	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.38	3	\$0.34	0%	0%	\$80.70	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.34	0%	0%	\$80.70	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	Existing	0.23	3	\$0.82	0%	0%	\$151.28	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	Existing	0.26	3	\$0.82	0%	0%	\$151.28	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	Existing	0.12	3	\$0.82	0%	0%	\$151.28	0.00	0.00	COM_CX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Commissioning	sqft	Existing	0.15	3	\$0.82	0%	0%	\$151.28	0.00	0.00	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.34	3	\$0.82	0%	0%	\$151.28	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.14	3	\$0.82	0%	0%	\$151.28	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.88	3	\$0.82	0%	0%	\$151.28	0.00	0.00	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.23	3	\$0.26	24%	79%	\$48.02	150.76	157.34	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.26	24%	79%	\$48.02	59.87	60.94	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.12	3	\$0.26	24%	79%	\$48.02	90.78	91.68	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.15	3	\$0.26	24%	79%	\$48.02	63.55	66.16	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.34	3	\$0.26	24%	79%	\$48.02	217.42	245.81	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.26	24%	79%	\$48.02	94.14	102.17	COM_RCX-Lighting-AEG-1
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.88	3	\$0.26	24%	79%	\$48.02	583.85	632.57	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.24	10	\$0.09	0%	0%	\$63.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	2.73	10	\$1.12	0%	0%	\$71.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.71	3	\$0.24	0%	0%	\$137.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	1.33	10	\$3.24	0%	0%	\$421.42	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.27	10	\$0.70	0%	0%	\$457.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	Existing	199.00	16	\$75.53	20%	75%	\$45.66	41.86	41.86	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,774.04	25	\$4,586.38	0%	0%	\$182.78	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$706.18	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.11	45	\$0.84	15%	50%	\$706.18	4.88	4.88	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$706.18	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.12	20	\$0.86	15%	50%	\$820.19	3.54	3.54	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$820.19	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$820.19	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.02	20	\$0.81	45%	50%	\$9,999.00	0.41	0.41	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$9,999.00	-0.25	-0.25	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.35	-0.35	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$2,702.13	-1.00	-1.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$1.70	15%	50%	\$2,702.13	1.32	1.32	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$1.70	15%	50%	\$2,702.13	1.87	1.87	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.17	18	\$0.59	15%	35%	\$9,999.00	0.07	0.07	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-3.53	18	\$0.59	15%	35%	\$9,999.00	-0.47	-0.47	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.55	18	\$0.59	15%	35%	\$9,999.00	-0.67	-0.67	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.99	30	\$37.07	66%	66%	\$268.75	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	8.94	30	\$37.07	66%	66%	\$268.75	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.26	30	\$37.07	66%	66%	\$268.75	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	52.08	5	\$267.96	18%	75%	\$1,230.47	11.07	11.13	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.29	15	\$0.05	10%	15%	\$22.06	3.21	3.22	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.45	14	\$5.25	75%	75%	\$1,512.28	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.34	18	\$0.26	15%	20%	\$85.79	6.51	6.51	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	284.09	15	\$189.00	19%	25%	\$82.42	2.45	2.45	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	102.37	15	\$1,273.23	19%	50%	\$1,540.81	4.87	4.87	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.22	15	\$0.17	19%	50%	\$93.08	17.13	17.13	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	44%	\$1,401.27	1.74	1.74	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.67	15	\$0.76	3%	15%	\$90.09	5.90	5.90	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.38	15	\$0.76	3%	15%	\$90.09	10.80	10.80	HVAC_DOAS-Heating-7PLN-v5-1
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,143.77	15	\$7,501.21	15%	15%	\$78.62	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,701.19	15	\$7,501.21	15%	15%	\$78.62	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	New	6.37	3	\$33.20	15%	45%	\$1,867.81	0.54	0.55	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	New	144.43	15	\$410.87	15%	45%	\$354.86	66.43	66.57	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	76.57	15	\$698.92	15%	75%	\$1,138.70	81.00	81.11	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	122.48	20	\$685.47	15%	75%	\$248.68	3.42	3.42	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	180.20	20	\$685.47	15%	75%	\$248.68	3.26	3.26	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.46	5	\$0.75	30%	40%	\$128.04	4.78	4.80	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.65	5	\$0.75	30%	40%	\$128.04	2.39	2.39	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.29	5	\$0.75	30%	40%	\$128.04	3.40	3.40	STAT_WIFI-AII-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	111.57	10	\$8.63	25%	65%	\$11.67	10.21	10.21	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	122.59	10	\$17.56	25%	65%	(\$130.84)	5.61	5.61	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	24.22	10	\$16.82	25%	65%	(\$219.70)	1.25	1.25	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	0%	0%	\$9.13	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	453.69	15	\$15.38	1%	75%	\$4.20	44.77	44.77	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	515.77	4	\$75.87	25%	40%	(\$112.44)	9.77	9.77	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	4.08	4.08	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,292.03	63.52	63.52	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.82	15	\$0.36	11%	23%	\$55.60	94.13	96.04	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.15	15	\$0.60	11%	23%	\$65.53	131.78	134.46	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	111.75	15	\$56.14	1%	3%	\$68.61	1.26	1.34	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.11	15	\$65.99	1%	3%	\$172.97	0.05	0.05	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,808.95	11	\$26.48	15%	30%	\$1.38	9.01	9.14	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	287.63	16	\$1,864.95	5%	15%	\$784.36	7.35	7.45	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.65	9	\$0.65	15%	25%	\$65.33	21.89	22.63	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	94.15	8	\$56.85	15%	25%	\$108.57	10.68	11.05	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	117.73	7	\$3,486.31	15%	30%	\$5,825.49	18.16	18.81	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	97.27	12	\$50.74	11%	75%	\$72.31	3.55	3.55	RFG_ASH-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	71.00	4	\$24.51	5%	35%	\$139.59	1.94	2.78	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	104.30	15	\$347.21	0%	0%	\$478.93	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	112.86	2	\$10.74	11%	75%	\$70.28	8.54	13.28	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	2.58	15	\$508.61	6%	38%	\$9,999.00	113.11	121.53	RFG_HECOMP-Refrigeration-AEO17-3
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	45.30	15	\$5,552.98	6%	38%	\$9,999.00	165.44	177.75	RFG_HECOMP-Refrigeration-AEO17-5
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	327.58	15	\$305.13	11%	75%	\$286.44	95.72	102.83	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,311.86	15	\$539.09	6%	38%	\$59.12	143.74	154.43	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	2,756.24	10	\$449.00	0%	0%	\$28.53	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	227.93	16	\$153.90	11%	75%	\$111.45	12.20	14.67	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	81.97	15	\$135.00	6%	38%	\$279.99	0.54	0.65	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,936.47	16	\$105.92	11%	75%	\$9.48	92.54	116.76	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,490.71	10	\$521.11	11%	75%	\$76.00	55.51	73.54	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	12.93	8	\$647.70	5%	35%	\$9,999.00	1.51	2.11	RFG_ASH-Refrigeration-NMTRM-2016-1
Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	558.41	12	\$5,648.09	5%	35%	\$1,628.04	51.26	55.55	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	43.28	8	\$15.90	0%	0%	\$63.70	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.46	8	\$3.87	0%	0%	\$150.42	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	15.67	5	\$49.37	0%	0%	\$748.19	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,279.72	5	\$288.64	25%	75%	\$53.58	29.77	29.77	VEND_CTRL-Miscellaneous-SCE-17R0-41
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,565.98	18	\$8,815.42	25%	50%	\$220.85	17.48	17.48	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	159.13	15	\$335.00	0%	0%	\$120.06	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	186.60	15	\$335.00	0%	0%	\$120.06	0.00	0.00	AEG - BEST

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Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	42.02	4	\$37.32	10%	50%	\$222.82	4.18	3.47	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$12.32	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$12.32	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$12.32	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$4.52	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	539.41	18	\$4,231.40	0%	0%	\$897.35	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.03	10	\$1.58	0%	0%	\$7,422.79	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	112.58	7	\$423.28	0%	0%	(\$786.90)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$786.90)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$786.90)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	17,289.98	15	\$1,114.41	0%	0%	\$66.83	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$66.83	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,545.55	6	\$37.07	1%	3%	\$5.01	3.90	3.90	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.08	20	\$0.73	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	0.80	25	\$4.24	10%	25%	\$50.10	28.03	28.07	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.15	25	\$4.24	10%	25%	\$50.10	14.03	14.03	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.50	25	\$4.24	10%	25%	\$50.10	19.90	19.90	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	2.04	25	\$4.24	10%	25%	\$50.10	46.70	46.70	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	3.56	25	\$4.24	10%	25%	\$50.10	492.20	501.91	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	1.43	25	\$4.24	10%	25%	\$50.10	159.69	161.88	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.12	3	\$0.61	0%	0%	\$107.26	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.61	0%	0%	\$107.26	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.61	0%	0%	\$107.26	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.32	3	\$0.61	0%	0%	\$107.26	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.55	3	\$0.61	0%	0%	\$107.26	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.22	3	\$0.61	0%	0%	\$107.26	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.61	3	\$0.61	0%	0%	\$107.26	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.06	3	\$0.61	0%	0%	\$107.26	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	New	0.17	3	\$1.31	100%	100%	\$167.62	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	New	0.25	3	\$1.31	100%	100%	\$167.62	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	New	0.11	3	\$1.31	100%	100%	\$167.62	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Water Heating	Commissioning	sqft	New	0.15	3	\$1.31	100%	100%	\$167.62	0.00	0.00	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	New	0.63	3	\$1.31	100%	100%	\$167.62	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.25	3	\$1.31	100%	100%	\$167.62	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	New	1.42	3	\$1.31	100%	100%	\$167.62	0.00	0.00	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	New	0.17	3	\$0.42	0%	0%	\$53.21	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	New	0.25	3	\$0.42	0%	0%	\$53.21	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.11	3	\$0.42	0%	0%	\$53.21	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.15	3	\$0.42	0%	0%	\$53.21	0.00	0.00	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.63	3	\$0.42	0%	0%	\$53.21	0.00	0.00	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.25	3	\$0.42	0%	0%	\$53.21	0.00	0.00	COM_RCX-Lighting-AEG-1

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Restaurant	Refrigeration	Retrocommissioning	sqft	New	1.42	3	\$0.42	0%	0%	\$53.21	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.44	10	\$0.09	0%	0%	\$32.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	4.38	10	\$1.12	0%	0%	\$42.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.13	3	\$0.24	0%	0%	\$81.99	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	2.13	10	\$3.24	0%	0%	\$252.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.43	10	\$0.70	0%	0%	\$273.61	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	New	199.00	16	\$75.53	20%	75%	\$45.66	6.61	6.61	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,966.97	25	\$4,564.56	0%	0%	\$165.34	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.33	45	\$0.84	15%	35%	\$252.24	72.46	74.33	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$252.24	0.03	0.03	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$252.24	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.44	20	\$0.81	45%	50%	\$1,648.53	24.15	24.78	Building Energy Simulation Tool

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Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.27	20	\$0.81	45%	50%	\$1,648.53	-2.80	-2.85	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.81	45%	50%	\$1,648.53	-7.44	-7.48	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.78	45	\$1.70	15%	35%	\$155.06	96.62	99.10	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$1.70	15%	35%	\$155.06	5.04	5.13	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.09	45	\$1.70	15%	35%	\$155.06	13.40	13.47	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	1.72	18	\$0.59	15%	25%	\$35.14	0.63	0.64	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.18	18	\$0.59	15%	25%	\$35.14	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.07	18	\$0.59	15%	25%	\$35.14	0.03	0.03	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.93	30	\$37.07	48%	48%	\$318.86	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	7.58	30	\$37.07	48%	48%	\$318.86	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.74	30	\$37.07	48%	48%	\$318.86	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,000.21	10	\$914.46	15%	75%	\$34.74	0.54	0.54	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	379.14	15	\$248.07	15%	75%	\$81.67	7.09	7.15	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	949.71	15	\$263.92	15%	75%	\$34.69	1.78	1.79	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	30.38	15	\$248.07	15%	75%	\$1,011.86	0.22	0.22	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	32,816.07	10	\$1,796.53	15%	75%	\$23.88	1.70	1.70	AEG-BEST

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Grocery	Cooling	HVAC - Economizer	HP cool	Existing	137.48	5	\$267.96	18%	75%	\$474.70	205.25	211.48	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.44	15	\$0.05	5%	15%	\$14.73	52.58	54.69	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.46	14	\$5.25	3%	75%	\$199.94	66.94	68.83	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.41	18	\$0.26	15%	20%	\$71.54	28.37	28.52	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	529.93	15	\$189.00	13%	25%	\$44.55	36.72	37.04	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	190.96	15	\$1,273.23	13%	50%	\$832.82	41.59	41.95	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.27	15	\$0.11	13%	50%	\$50.31	146.17	147.43	FAN_VSD-Ventilation-MIDATL-v3.0-13
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	1%	34%	\$1,168.50	11.92	12.02	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.87	15	\$0.76	0%	11%	\$54.11	21.10	21.70	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.90	15	\$0.76	0%	11%	\$54.11	145.79	147.04	HVAC_DOAS-Heating-7PLN-v5-1
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	4,840.96	15	\$7,501.21	15%	15%	\$58.25	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	11,577.54	15	\$7,501.21	15%	15%	\$58.25	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	9.05	9.35	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	Existing	381.66	15	\$410.87	15%	45%	\$136.79	364.80	371.65	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	202.33	15	\$698.92	15%	75%	\$438.93	372.97	378.26	RTU_PREC-Cooling-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	332.12	20	\$1,175.09	15%	25%	\$166.95	2.92	3.21	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	473.55	20	\$1,175.09	15%	25%	\$166.95	2.72	2.72	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.70	5	\$0.75	30%	40%	\$95.40	77.07	79.05	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.87	5	\$0.75	30%	40%	\$95.40	17.86	18.18	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.35	5	\$0.75	30%	40%	\$95.40	47.51	47.76	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	120.06	10	\$8.63	25%	65%	\$12.12	23.35	26.20	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	131.93	10	\$17.56	25%	65%	(\$135.88)	12.83	14.39	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	26.07	10	\$16.82	25%	65%	(\$228.17)	2.50	2.77	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	605.99	11	\$37.97	0%	0%	\$10.19	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	488.11	15	\$15.38	16%	75%	\$4.36	57.71	63.89	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	555.05	4	\$75.87	25%	40%	(\$116.77)	39.91	44.18	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	97.85	2	\$5.13	15%	75%	\$29.37	31.38	34.74	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.40	20	\$258.33	1%	30%	\$2,557.10	99.92	110.61	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.00	15	\$0.36	3%	23%	\$46.94	364.19	376.11	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.41	15	\$0.60	3%	23%	\$55.32	509.87	526.56	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	443.08	15	\$56.14	1%	3%	\$16.96	9.67	10.48	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.61	15	\$65.99	1%	3%	\$167.89	0.33	0.36	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	8,140.58	11	\$26.48	15%	30%	\$0.50	168.82	179.19	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	833.58	16	\$1,864.95	5%	15%	\$284.24	115.25	122.32	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.20	9	\$0.65	15%	25%	\$96.90	139.48	152.78	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	91.46	8	\$56.85	15%	25%	\$119.90	74.13	81.21	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	114.36	7	\$3,486.31	15%	30%	\$6,433.16	139.04	152.31	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	291.91	12	\$50.74	33%	75%	\$25.19	515.22	530.32	RFG_ASH-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	18.80	4	\$3.68	27%	35%	\$61.47	12.47	13.84	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	698.42	15	\$347.21	23%	75%	\$65.94	5,293.57	5,613.92	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	134.47	2	\$10.74	33%	75%	\$61.98	34.12	56.07	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	17.28	15	\$508.61	16%	38%	\$6,058.57	1,519.37	1,611.32	RFG_HECOMP-Refrigeration-AEO15-4
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	303.34	15	\$5,552.98	16%	38%	\$4,107.75	2,222.28	2,356.77	RFG_HECOMP-Refrigeration-AEO15-4

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Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	731.21	15	\$305.13	33%	75%	\$118.32	1,285.67	1,363.47	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,317.73	15	\$539.09	16%	38%	\$54.27	1,930.78	2,047.63	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	2,768.58	10	\$449.00	15%	30%	\$26.19	2,863.49	3,036.78	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	280.10	16	\$153.90	33%	75%	\$71.07	345.27	368.44	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	100.73	15	\$135.00	16%	38%	\$178.53	15.52	16.56	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	246.76	16	\$105.92	33%	75%	\$66.15	115.61	147.35	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	189.96	10	\$521.11	33%	75%	\$530.11	89.00	113.43	RFG_DDEF-Refrigeration-VTTRM-1
Grocery	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	1,293.75	8	\$54,406.57	27%	35%	\$9,999.00	0.78	1.28	RFG_ADC-Refrigeration-PGE-R6-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	560.91	12	\$605.15	27%	35%	\$160.12	328.75	348.64	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	58.63	8	\$15.90	20%	75%	\$49.26	715.30	737.75	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	13.43	8	\$3.87	20%	75%	\$52.34	61.42	63.35	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	47.21	5	\$49.37	20%	75%	\$260.32	26.98	27.84	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	984.25	5	\$288.64	25%	75%	\$73.22	64.77	67.01	VEND_CTRL-Miscellaneous-SCE-17R0-32
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,520.66	18	\$8,815.42	25%	50%	\$184.16	76.19	76.60	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	255.08	15	\$335.00	0%	0%	\$77.98	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	304.68	15	\$335.00	0%	0%	\$77.98	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.54	4	\$37.32	10%	50%	\$771.00	17.98	15.71	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$6.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$6.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$6.38	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$29.59	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,371.59	18	\$4,231.40	0%	0%	\$205.78	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$1.00	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	121.15	7	\$423.28	0%	0%	(\$817.22)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$817.22)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$817.22)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	18,606.76	15	\$1,114.41	0%	0%	\$69.41	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$69.41	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,655.50	6	\$37.07	1%	3%	\$4.68	8.43	8.43	ESTAR_WC-Miscellaneous-7PLN-v6-1
Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.03	20	\$0.30	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.04	25	\$4.24	0%	0%	\$59.63	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	1.36	25	\$4.24	0%	0%	\$59.63	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.90	25	\$4.24	0%	0%	\$59.63	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.57	25	\$4.24	0%	0%	\$59.63	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	3.48	25	\$4.24	0%	0%	\$59.63	0.00	0.00	ADVNC-AII-RSRCH-1

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Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.76	25	\$4.24	0%	0%	\$59.63	0.00	0.00	ADVNC-All-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.19	3	\$0.59	4%	27%	\$103.53	52.41	54.51	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.24	3	\$0.59	4%	27%	\$103.53	12.14	12.49	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.59	4%	27%	\$103.53	32.31	32.58	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.59	4%	27%	\$103.53	17.17	19.01	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.33	3	\$0.59	4%	27%	\$103.53	100.77	108.18	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.59	4%	27%	\$103.53	31.65	34.66	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	1.05	3	\$0.59	4%	27%	\$103.53	359.94	357.02	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.59	4%	27%	\$103.53	6.77	5.91	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	Existing	0.27	3	\$0.86	0%	0%	\$85.74	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	Existing	0.33	3	\$0.86	0%	0%	\$85.74	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Ventilation	Commissioning	sqft	Existing	0.13	3	\$0.86	0%	0%	\$85.74	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	Existing	0.04	3	\$0.86	0%	0%	\$85.74	0.00	0.00	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.38	3	\$0.86	0%	0%	\$85.74	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.12	3	\$0.86	0%	0%	\$85.74	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	Existing	2.42	3	\$0.86	0%	0%	\$85.74	0.00	0.00	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.27	3	\$0.27	10%	62%	\$27.22	164.06	170.64	COM_RCX-HVAC-AEG-1

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Grocery	Heating	Retrocommissioning	sqft	Existing	0.33	3	\$0.27	10%	62%	\$27.22	38.01	39.09	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.27	10%	62%	\$27.22	101.13	102.00	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.27	10%	62%	\$27.22	17.91	19.83	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.38	3	\$0.27	10%	62%	\$27.22	262.87	282.21	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.27	10%	62%	\$27.22	82.55	90.43	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.42	3	\$0.27	10%	62%	\$27.22	1,877.94	1,862.72	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.26	10	\$0.09	0%	0%	\$54.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	7.47	10	\$1.12	0%	0%	\$23.23	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.94	3	\$0.24	0%	0%	\$44.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	3.63	10	\$3.24	0%	0%	\$137.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.73	10	\$0.70	0%	0%	\$149.49	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	Existing	202.29	16	\$75.53	20%	75%	\$44.92	12.51	12.51	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,797.81	25	\$4,625.66	0%	0%	\$182.78	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.05	45	\$0.84	15%	50%	\$1,157.89	7.33	7.34	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.02	45	\$0.84	15%	50%	\$1,157.89	0.38	0.38	Building Energy Simulation Tool

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Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,157.89	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.37	20	\$0.81	45%	50%	\$336.71	6.98	6.99	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$336.71	-0.22	-0.22	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$336.71	-0.92	-0.92	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$2,196.91	5.93	5.94	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,196.91	0.17	0.17	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,196.91	0.74	0.74	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-3.70	18	\$0.59	15%	25%	\$9,999.00	-0.45	-0.46	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.39	18	\$0.59	15%	25%	\$9,999.00	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.25	18	\$0.59	15%	25%	\$9,999.00	0.04	0.04	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.83	30	\$37.07	66%	66%	\$427.03	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	5.15	30	\$37.07	66%	66%	\$427.03	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.95	30	\$37.07	66%	66%	\$427.03	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,315.04	10	\$914.46	15%	75%	\$41.61	0.07	0.07	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	314.20	15	\$248.07	15%	75%	\$97.82	1.17	1.17	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	787.04	15	\$263.92	15%	75%	\$41.55	0.29	0.29	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	24.93	15	\$248.07	15%	75%	\$1,232.76	0.04	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	26,677.83	10	\$1,796.53	15%	75%	\$29.37	0.22	0.22	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	114.74	5	\$267.96	18%	75%	\$558.61	16.60	16.69	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.37	15	\$0.05	10%	15%	\$17.31	4.51	4.53	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.11	14	\$5.25	75%	75%	\$216.92	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.61	18	\$0.26	15%	20%	\$47.88	13.70	13.69	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	525.36	15	\$189.00	19%	25%	\$44.57	5.18	5.17	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	189.32	15	\$1,273.23	19%	50%	\$833.17	10.28	10.28	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.40	15	\$0.16	19%	50%	\$50.33	36.12	36.12	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.04	15	\$0.23	1%	34%	\$782.13	3.54	3.54	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.80	15	\$0.76	0%	11%	\$44.19	3.99	3.99	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.33	15	\$0.76	0%	11%	\$44.19	43.25	43.25	HVAC_DOAS-Heating-7PLN-v5-1

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Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,007.38	15	\$7,501.21	15%	15%	\$64.65	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,406.47	15	\$7,501.21	15%	15%	\$64.65	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	New	7.21	3	\$33.20	15%	45%	\$1,650.91	0.41	0.42	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	New	318.55	15	\$410.87	15%	45%	\$160.94	98.33	98.54	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	168.87	15	\$698.92	15%	75%	\$516.42	119.76	119.94	RTU_PREC-Cooling-XCELCO-2017-18-1
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	238.70	20	\$1,175.09	15%	25%	\$225.09	0.61	0.61	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	334.56	20	\$1,175.09	15%	25%	\$225.09	0.47	0.47	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.58	5	\$0.75	30%	40%	\$95.28	6.70	6.72	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	30%	40%	\$95.28	1.67	1.67	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.51	5	\$0.75	30%	40%	\$95.28	7.15	7.15	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	119.88	10	\$8.63	25%	65%	\$10.86	3.83	3.83	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	131.72	10	\$17.56	25%	65%	(\$121.77)	2.11	2.11	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	26.03	10	\$16.82	25%	65%	(\$204.47)	0.47	0.47	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	0%	0%	\$9.13	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	487.36	15	\$15.38	1%	75%	\$3.91	16.81	16.81	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	554.20	4	\$75.87	25%	40%	(\$104.64)	3.67	3.67	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	1.54	1.54	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,291.49	23.86	23.86	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.00	15	\$0.36	11%	23%	\$45.15	137.94	138.96	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.39	15	\$0.60	11%	23%	\$53.21	193.12	194.54	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	425.81	15	\$56.14	1%	3%	\$16.85	1.70	1.74	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.53	15	\$65.99	1%	3%	\$157.53	0.06	0.06	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	7,536.85	11	\$26.48	15%	30%	\$0.51	28.47	28.90	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	771.76	16	\$1,864.95	5%	15%	\$292.38	23.21	23.53	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.76	9	\$0.65	15%	25%	\$145.59	14.26	14.70	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	58.23	8	\$56.85	15%	25%	\$180.14	6.95	7.18	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	72.82	7	\$3,486.31	15%	30%	\$9,665.47	11.83	12.23	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	274.83	12	\$50.74	41%	75%	\$25.59	72.94	72.94	RFG_ASH-Refrigeration-7PLN-v6-1

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Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	17.21	4	\$3.68	35%	35%	\$64.10	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	653.33	15	\$347.21	11%	75%	\$67.14	1,284.69	1,307.96	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	110.40	2	\$10.74	41%	75%	\$72.19	1.11	1.68	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	16.17	15	\$508.61	21%	38%	\$6,168.23	239.92	244.27	RFG_HECOMP-Refrigeration-AEO17-3
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	283.75	15	\$5,552.98	21%	38%	\$4,182.10	350.92	357.27	RFG_HECOMP-Refrigeration-AEO17-5
Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	684.00	15	\$305.13	41%	75%	\$120.46	203.02	206.70	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,232.65	15	\$539.09	21%	38%	\$55.25	304.89	310.41	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	2,589.83	10	\$449.00	20%	30%	\$26.66	302.86	309.10	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	261.94	16	\$153.90	41%	75%	\$72.54	55.72	57.17	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	94.20	15	\$135.00	21%	38%	\$182.23	2.45	2.51	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	206.84	16	\$105.92	41%	75%	\$74.66	18.51	19.63	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	159.23	10	\$521.11	41%	75%	\$598.31	11.13	12.06	RFG_DDEF-Refrigeration-VTTRM-1

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Grocery	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	12.65	8	\$647.70	35%	35%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	524.70	12	\$2,541.64	35%	35%	\$684.66	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	55.03	8	\$15.90	20%	75%	\$50.10	96.78	96.78	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	12.60	8	\$3.87	20%	75%	\$53.24	8.31	8.31	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	44.29	5	\$49.37	20%	75%	\$264.81	2.52	2.52	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	918.95	5	\$288.64	25%	75%	\$74.61	5.97	5.97	VEND_CTRL-Miscellaneous-SCE-17R0-41
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	8,180.09	18	\$8,815.42	25%	50%	\$123.27	36.78	36.78	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	183.34	15	\$335.00	0%	0%	\$101.58	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	225.27	15	\$335.00	0%	0%	\$101.58	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	21.14	4	\$37.32	10%	50%	\$461.47	2.30	2.03	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$14.07	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$14.07	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$14.07	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$21.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,514.05	18	\$4,231.40	0%	0%	\$137.74	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.91	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	120.97	7	\$423.28	0%	0%	(\$732.34)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$732.34)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$732.34)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	18,578.17	15	\$1,114.41	0%	0%	\$62.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$62.20	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,655.50	6	\$37.07	1%	3%	\$4.68	1.34	1.34	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.03	20	\$0.27	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.02	25	\$4.24	10%	15%	\$56.59	13.00	13.01	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	New	1.37	25	\$4.24	10%	15%	\$56.59	3.25	3.25	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.90	25	\$4.24	10%	15%	\$56.59	13.86	13.86	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.60	25	\$4.24	10%	15%	\$56.59	5.79	5.79	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	3.54	25	\$4.24	10%	15%	\$56.59	208.04	209.74	ADVNC-AII-RSRCH-1
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.77	25	\$4.24	10%	15%	\$56.59	32.59	32.92	ADVNC-AII-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	New	0.16	3	\$1.14	4%	27%	\$135.11	2.73	2.75	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	New	0.21	3	\$1.14	4%	27%	\$135.11	0.68	0.68	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.14	3	\$1.14	4%	27%	\$135.11	2.91	2.91	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.09	3	\$1.14	4%	27%	\$135.11	1.22	1.22	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.55	3	\$1.14	4%	27%	\$135.11	10.93	11.25	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$1.14	4%	27%	\$135.11	2.28	2.39	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	New	1.70	3	\$1.14	4%	27%	\$135.11	36.79	35.57	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$1.14	4%	27%	\$135.11	0.67	0.59	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	New	0.22	3	\$1.22	100%	100%	\$79.13	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	New	0.29	3	\$1.22	100%	100%	\$79.13	0.00	0.00	COM_CX-HVAC-AEG-1

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Grocery	Ventilation	Commissioning	sqft	New	0.19	3	\$1.22	100%	100%	\$79.13	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	New	0.04	3	\$1.22	100%	100%	\$79.13	0.00	0.00	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	New	0.63	3	\$1.22	100%	100%	\$79.13	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	New	0.14	3	\$1.22	100%	100%	\$79.13	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	New	3.93	3	\$1.22	100%	100%	\$79.13	0.00	0.00	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	New	0.22	3	\$0.39	0%	0%	\$25.12	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Heating	Retrocommissioning	sqft	New	0.29	3	\$0.39	0%	0%	\$25.12	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	New	0.19	3	\$0.39	0%	0%	\$25.12	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.39	0%	0%	\$25.12	0.00	0.00	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.63	3	\$0.39	0%	0%	\$25.12	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.39	0%	0%	\$25.12	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	New	3.93	3	\$0.39	0%	0%	\$25.12	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.44	10	\$0.09	0%	0%	\$30.92	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	12.13	10	\$1.12	0%	0%	\$13.77	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	3.14	3	\$0.24	0%	0%	\$26.54	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	5.89	10	\$3.24	0%	0%	\$81.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	1.18	10	\$0.70	0%	0%	\$88.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	New	202.29	16	\$75.53	20%	75%	\$44.92	2.17	2.17	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,977.06	25	\$4,580.09	0%	0%	\$165.34	0.00	0.00	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.29	45	\$0.84	15%	35%	\$72.12	66.95	67.47	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.85	45	\$0.84	15%	35%	\$72.12	9.15	9.26	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$72.12	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	0.76	20	\$0.86	15%	35%	\$127.90	175.43	176.79	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$127.90	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$127.90	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.67	20	\$0.81	45%	50%	\$263.24	38.80	39.10	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$263.24	-0.67	-0.68	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.08	20	\$0.81	45%	50%	\$263.24	-4.56	-4.65	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.06	45	\$1.70	15%	35%	\$53.36	-12.50	-12.60	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.43	45	\$1.70	15%	35%	\$53.36	22.82	23.08	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.75	45	\$1.70	15%	35%	\$53.36	155.28	158.39	Building Energy Simulation Tool

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Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	30.38	18	\$0.59	15%	50%	\$9,999.00	89.31	90.00	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-44.43	18	\$0.59	15%	50%	\$9,999.00	-6.08	-6.15	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-13.77	18	\$0.59	15%	50%	\$9,999.00	-41.38	-42.21	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	12.90	30	\$37.07	48%	48%	\$46.23	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	60.14	30	\$37.07	48%	48%	\$46.23	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	10.74	30	\$37.07	48%	48%	\$46.23	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	24,766.92	10	\$914.46	15%	75%	\$5.69	640.09	648.11	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	665.66	15	\$248.07	15%	75%	\$47.19	2,392.48	2,422.49	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,423.89	15	\$263.92	15%	75%	\$23.47	511.77	518.19	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	186.79	15	\$248.07	15%	75%	\$166.40	547.55	546.85	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	50,173.90	10	\$1,796.53	15%	75%	\$15.79	1,057.58	1,056.23	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	184.26	5	\$267.96	18%	75%	\$353.18	711.17	721.30	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.65	15	\$0.05	5%	15%	\$9.86	164.64	167.19	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.42	14	\$5.25	3%	75%	\$154.43	93.81	95.43	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.86	18	\$0.26	15%	20%	\$35.16	101.38	103.42	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	2,124.90	15	\$189.00	13%	25%	\$11.33	131.64	135.78	VENT_PMSM-Ventilation-AEG-2016-2

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Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	765.71	15	\$1,273.23	13%	50%	\$211.84	149.10	153.79	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.55	15	\$0.06	13%	50%	\$12.80	524.00	540.47	FAN_VSD-Ventilation-MIDATL-v3.0-13
Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.05	15	\$0.23	10%	20%	\$574.38	12.47	12.86	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	2.32	15	\$0.76	3%	7%	\$26.71	8.63	8.78	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.27	15	\$0.76	3%	7%	\$26.71	104.06	107.33	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	7,152.89	15	\$7,501.21	15%	15%	\$24.85	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	30,854.99	15	\$7,501.21	15%	15%	\$24.85	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.93	2.71	2.80	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	Existing	430.04	15	\$410.87	15%	45%	\$121.40	122.75	125.01	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	227.97	15	\$698.92	15%	75%	\$389.56	125.33	127.07	RTU_PREC-Cooling-XCELCO-2017-18-1
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	382.23	20	\$1,077.17	15%	25%	\$86.33	1.28	1.34	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	1,009.17	20	\$1,077.17	15%	25%	\$86.33	0.59	0.59	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.04	5	\$0.75	30%	40%	\$44.63	240.56	242.42	STAT_WIFI-AII-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	2.32	5	\$0.75	30%	40%	\$44.63	24.95	25.23	STAT_WIFI-AII-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.72	5	\$0.75	30%	40%	\$44.63	169.77	173.18	STAT_WIFI-AII-7PLN-v2-1

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Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	374.33	10	\$8.63	25%	65%	\$3.58	19.82	20.39	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	411.32	10	\$17.56	25%	65%	(\$40.13)	10.89	11.20	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	81.28	10	\$16.82	25%	65%	(\$67.38)	2.12	2.17	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	30%	\$8.98	37.75	38.32	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,522.28	15	\$15.38	16%	75%	\$1.29	48.98	50.22	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,730.56	4	\$75.87	25%	40%	(\$34.49)	33.86	34.72	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$25.88	26.62	27.30	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$2,253.89	84.78	86.93	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.95	15	\$0.36	3%	23%	\$49.78	609.50	631.09	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.33	15	\$0.60	3%	23%	\$58.67	853.30	883.53	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	319.46	15	\$56.14	1%	3%	\$23.49	16.59	18.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.62	15	\$65.99	1%	3%	\$167.61	0.55	0.59	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,559.44	11	\$26.48	15%	30%	\$0.62	243.26	257.87	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	671.68	16	\$1,864.95	5%	15%	\$352.59	166.06	176.03	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.74	9	\$0.65	15%	25%	\$63.60	83.13	88.52	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	120.24	8	\$56.85	15%	25%	\$87.06	44.18	47.05	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	150.34	7	\$3,486.31	15%	30%	\$4,671.06	82.87	88.25	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	23.49	12	\$50.74	4%	25%	\$313.00	7.85	8.08	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	8.28	4	\$24.51	4%	25%	\$1,027.45	1.88	2.32	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	36.30	15	\$347.21	0%	0%	\$1,295.90	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	31.11	2	\$10.74	4%	25%	\$267.04	2.90	4.85	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.90	15	\$508.61	2%	13%	\$9,999.00	41.77	45.15	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	15.76	15	\$5,552.98	2%	13%	\$9,999.00	61.09	66.03	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	114.00	15	\$305.13	4%	25%	\$775.05	35.34	38.20	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	456.53	15	\$539.09	2%	13%	\$159.97	53.08	57.37	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	959.18	10	\$449.00	0%	0%	\$77.20	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	54.34	16	\$153.90	4%	25%	\$381.02	5.84	6.48	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	19.54	15	\$135.00	2%	13%	\$957.21	0.26	0.29	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	302.25	16	\$105.92	4%	25%	\$57.46	9.47	13.24	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	232.67	10	\$521.11	4%	25%	\$460.48	7.29	10.19	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	99.78	8	\$18,135.52	4%	25%	\$9,999.00	0.33	0.56	RFG_ADC-Refrigeration-PGE-R6-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	194.33	12	\$605.15	4%	25%	\$471.99	45.18	48.84	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	10.49	8	\$15.90	0%	0%	\$275.43	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.08	8	\$3.87	0%	0%	\$650.38	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.80	5	\$49.37	0%	0%	\$3,234.46	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	894.33	5	\$288.64	25%	75%	\$80.58	34.48	35.67	VEND_CTRL-Miscellaneous-SCE-17R0-34
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	11,455.02	18	\$8,815.42	25%	50%	\$90.53	272.27	277.74	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	337.29	15	\$335.00	0%	0%	\$35.01	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	867.00	15	\$335.00	0%	0%	\$35.01	0.00	0.00	AEG - BEST

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Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	28.24	4	\$37.32	10%	50%	\$352.76	68.43	62.25	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$5.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$5.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$5.00	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$90.56	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	7,381.36	18	\$4,231.40	0%	5%	\$67.43	29.05	29.64	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	601.20	12	\$2,098.57	5%	7%	\$505.94	0.55	0.56	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.02	10	\$0.85	0%	5%	\$6,733.42	0.34	0.35	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	377.74	7	\$423.28	0%	5%	(\$206.58)	0.21	0.21	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	32.03	7	\$423.28	0%	5%	(\$206.58)	0.09	0.09	CW-Miscellaneous-RTF-v5.1-21

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Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	32.03	7	\$423.28	0%	5%	(\$206.58)	0.09	0.09	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	58,012.92	15	\$1,114.41	0%	5%	\$19.98	31.53	32.33	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,533.14	15	\$1,114.41	0%	5%	\$19.98	3.72	3.89	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	19,192.65	6	\$37.07	1%	3%	\$0.40	115.87	115.87	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.10	20	\$0.95	0%	5%	\$1,095.42	9.43	9.54	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.15	25	\$4.24	0%	0%	\$46.61	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	Existing	3.19	25	\$4.24	0%	0%	\$46.61	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.91	25	\$4.24	0%	0%	\$46.61	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	1.18	25	\$4.24	0%	0%	\$46.61	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	3.47	25	\$4.24	0%	0%	\$46.61	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$46.61	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	Existing	0.28	3	\$0.38	4%	28%	\$81.46	171.22	173.88	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	Existing	0.63	3	\$0.38	4%	28%	\$81.46	17.76	18.06	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.20	3	\$0.38	4%	28%	\$81.46	120.84	124.64	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.38	4%	28%	\$81.46	15.20	15.58	COM_SEM-Water Heating-AEG-1

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Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.31	3	\$0.38	4%	28%	\$81.46	180.31	194.20	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.38	4%	28%	\$81.46	19.68	20.96	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.38	4%	28%	\$81.46	20.77	20.88	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.38	4%	28%	\$81.46	26.88	24.46	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	Existing	0.39	3	\$2.18	0%	0%	\$379.98	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	Existing	0.87	3	\$2.18	0%	0%	\$379.98	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	Existing	0.27	3	\$2.18	0%	0%	\$379.98	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	Existing	0.09	3	\$2.18	0%	0%	\$379.98	0.00	0.00	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	Existing	0.36	3	\$2.18	0%	0%	\$379.98	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$2.18	0%	0%	\$379.98	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	Existing	0.08	3	\$2.18	0%	0%	\$379.98	0.00	0.00	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	Existing	0.39	3	\$0.69	15%	55%	\$120.62	395.13	401.26	COM_RCX-HVAC-AEG-1
Health	Heating	Retrocommissioning	sqft	Existing	0.87	3	\$0.69	15%	55%	\$120.62	40.98	41.69	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	Existing	0.27	3	\$0.69	15%	55%	\$120.62	278.86	287.63	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	Existing	0.09	3	\$0.69	15%	55%	\$120.62	11.69	11.99	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.36	3	\$0.69	15%	55%	\$120.62	346.76	373.46	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.69	15%	55%	\$120.62	37.85	40.30	COM_RCX-Lighting-AEG-1

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Health	Refrigeration	Retrocommissioning	sqft	Existing	0.08	3	\$0.69	15%	55%	\$120.62	79.89	80.29	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.25	10	\$0.09	0%	0%	\$56.54	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.24	10	\$1.12	0%	0%	\$745.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.06	3	\$0.24	0%	0%	\$1,438.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.12	10	\$3.24	0%	0%	\$4,422.55	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$4,798.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	Existing	216.71	16	\$75.53	20%	75%	\$41.93	15.96	15.96	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	14,868.69	25	\$24,582.68	0%	75%	\$182.78	465.14	467.85	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$185.00	3.71	3.69	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.38	45	\$0.84	15%	50%	\$185.00	2.50	2.50	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$185.00	5.10	5.10	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.40	20	\$0.86	15%	50%	\$230.85	59.21	59.01	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$230.85	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$230.85	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.81	45%	50%	\$9,999.00	3.09	3.08	Building Energy Simulation Tool

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Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.19	20	\$0.81	45%	50%	\$9,999.00	-0.18	-0.18	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$9,999.00	-1.17	-1.17	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$274.12	0.78	0.78	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.46	45	\$1.70	15%	50%	\$274.12	2.65	2.65	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.13	45	\$1.70	15%	50%	\$274.12	17.36	17.36	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	18.95	18	\$0.59	15%	35%	\$0.29	11.14	11.10	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	164.63	18	\$0.59	15%	35%	\$0.29	4.37	4.37	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	47.96	18	\$0.59	15%	35%	\$0.29	28.67	28.67	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	9.06	30	\$37.07	66%	66%	\$59.62	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	46.87	30	\$37.07	66%	66%	\$59.62	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	7.87	30	\$37.07	66%	66%	\$59.62	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	16,976.45	10	\$914.46	15%	75%	\$7.96	76.00	75.18	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	456.28	15	\$248.07	15%	75%	\$66.01	352.40	349.16	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	976.01	15	\$263.92	15%	75%	\$32.83	75.38	74.69	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	134.26	15	\$248.07	15%	75%	\$223.56	83.34	82.45	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	34,288.09	10	\$1,796.53	15%	75%	\$22.32	123.37	121.82	AEG-BEST

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Health	Cooling	HVAC - Economizer	HP cool	New	129.16	5	\$267.96	18%	75%	\$484.41	50.71	50.11	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.46	15	\$0.05	10%	15%	\$13.48	12.41	12.32	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.44	14	\$5.25	75%	75%	\$195.81	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.63	18	\$0.26	15%	20%	\$46.74	25.81	25.81	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,470.83	15	\$189.00	19%	25%	\$15.92	9.76	9.76	VENT_PMSM-Ventilation-AEG-2016-2
Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	530.02	15	\$1,273.23	19%	50%	\$297.57	19.39	19.39	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.41	15	\$0.06	19%	50%	\$17.98	68.14	68.13	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.04	15	\$0.23	10%	20%	\$763.50	1.95	1.95	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.85	15	\$0.76	3%	7%	\$39.35	1.43	1.43	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.55	15	\$0.76	3%	7%	\$39.35	9.62	9.62	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	5,024.53	15	\$7,501.21	15%	15%	\$31.94	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	24,045.15	15	\$7,501.21	15%	15%	\$31.94	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	New	7.26	3	\$33.20	15%	45%	\$1,636.57	0.13	0.13	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	New	362.04	15	\$410.87	15%	45%	\$141.52	34.52	34.58	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	191.92	15	\$698.92	15%	75%	\$454.11	42.03	42.08	RTU_PREC-Cooling-XCELCO-2017-18-1

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Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	302.74	20	\$1,077.17	15%	25%	\$103.56	0.28	0.28	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	839.46	20	\$1,077.17	15%	25%	\$103.56	0.12	0.12	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.73	5	\$0.75	30%	40%	\$58.12	18.41	18.28	STAT_WIFI-All-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.81	5	\$0.75	30%	40%	\$58.12	2.05	2.06	STAT_WIFI-All-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.53	5	\$0.75	30%	40%	\$58.12	13.47	13.47	STAT_WIFI-All-7PLN-v2-1
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	178.90	10	\$8.63	25%	65%	\$7.28	2.83	2.83	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	196.57	10	\$17.56	25%	65%	(\$81.60)	1.56	1.56	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	38.84	10	\$16.82	25%	65%	(\$137.01)	0.35	0.35	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	30%	\$9.13	9.38	9.38	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,455.01	15	\$15.38	1%	75%	\$1.31	12.42	12.42	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	827.05	4	\$75.87	25%	40%	(\$70.12)	2.71	2.71	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	1.13	1.13	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,291.44	17.62	17.62	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.00	15	\$0.36	11%	23%	\$45.10	253.11	255.58	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.40	15	\$0.60	11%	23%	\$53.15	354.35	357.81	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	322.90	15	\$56.14	1%	3%	\$22.19	3.16	3.24	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.44	15	\$65.99	1%	3%	\$157.61	0.10	0.11	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	6,072.98	11	\$26.48	15%	30%	\$0.64	42.31	42.88	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	621.86	16	\$1,864.95	5%	15%	\$362.66	34.48	34.91	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.25	9	\$0.65	15%	25%	\$84.85	9.81	9.98	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	86.33	8	\$56.85	15%	25%	\$116.15	4.79	4.87	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	107.95	7	\$3,486.31	15%	30%	\$6,231.95	8.14	8.29	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	22.12	12	\$50.74	4%	25%	\$317.97	1.43	1.43	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	7.27	4	\$24.51	4%	25%	\$1,104.82	0.15	0.17	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	33.69	15	\$347.21	0%	0%	\$1,328.34	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	25.54	2	\$10.74	4%	25%	\$311.22	0.12	0.19	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.83	15	\$508.61	2%	13%	\$9,999.00	8.48	8.71	RFG_HECOMP-Refrigeration-AEO17-3
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	14.63	15	\$5,552.98	2%	13%	\$9,999.00	12.40	12.73	RFG_HECOMP-Refrigeration-AEO17-5

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Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	105.80	15	\$305.13	4%	25%	\$794.45	7.17	7.37	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	423.72	15	\$539.09	2%	13%	\$163.97	10.77	11.06	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	890.23	10	\$449.00	0%	0%	\$79.13	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	49.80	16	\$153.90	4%	25%	\$395.04	1.21	1.26	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	17.91	15	\$135.00	2%	13%	\$992.43	0.05	0.06	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	257.06	16	\$105.92	4%	25%	\$63.93	1.99	2.29	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	197.89	10	\$521.11	4%	25%	\$512.26	1.19	1.42	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.93	8	\$647.70	4%	25%	\$9,999.00	0.05	0.06	RFG_ASH-Refrigeration-NMTRM-2016-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	180.36	12	\$5,648.09	4%	25%	\$4,515.49	8.25	8.49	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	9.84	8	\$15.90	0%	0%	\$280.13	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.01	8	\$3.87	0%	0%	\$661.46	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.56	5	\$49.37	0%	0%	\$3,290.24	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	835.00	5	\$288.64	25%	75%	\$82.11	3.27	3.27	VEND_CTRL-Miscellaneous-SCE-17R0-41
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	8,378.77	18	\$8,815.42	25%	50%	\$120.33	69.32	69.31	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	267.15	15	\$335.00	0%	0%	\$42.00	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	721.20	15	\$335.00	0%	0%	\$42.00	0.00	0.00	AEG - BEST
Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	47.17	4	\$37.32	10%	50%	\$210.36	9.15	8.32	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$13.09	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$13.09	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$13.09	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$36.62	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	5,399.09	18	\$4,231.40	0%	5%	\$89.64	7.40	7.40	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	566.02	12	\$2,098.57	5%	7%	\$513.97	0.10	0.10	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.02	10	\$0.79	0%	5%	\$6,351.69	0.06	0.06	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	361.05	7	\$423.28	0%	5%	(\$209.77)	0.03	0.03	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	30.63	7	\$423.28	0%	5%	(\$209.77)	0.01	0.01	CW-Miscellaneous-RTF-v5.1-21
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	30.63	7	\$423.28	0%	5%	(\$209.77)	0.01	0.01	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	55,449.53	15	\$1,114.41	0%	5%	\$20.32	6.41	6.41	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,418.78	15	\$1,114.41	0%	5%	\$20.32	0.75	0.75	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	9,596.33	6	\$37.07	1%	3%	\$0.81	19.11	19.11	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.09	20	\$0.85	0%	5%	\$990.89	1.97	1.97	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	New	1.28	25	\$4.24	10%	25%	\$44.30	106.82	106.54	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	New	3.17	25	\$4.24	10%	25%	\$44.30	11.92	11.93	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.92	25	\$4.24	10%	25%	\$44.30	78.18	78.18	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	New	1.20	25	\$4.24	10%	25%	\$44.30	12.78	12.78	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	3.52	25	\$4.24	10%	25%	\$44.30	1,137.76	1,149.84	ADVNC-AII-RSRCH-1

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Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	25%	\$44.30	65.99	66.45	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	New	0.20	3	\$0.37	4%	28%	\$76.77	7.84	7.73	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	New	0.49	3	\$0.37	4%	28%	\$76.77	0.88	0.88	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	New	0.14	3	\$0.37	4%	28%	\$76.77	5.74	5.74	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.37	4%	28%	\$76.77	0.94	0.94	COM_SEM-Water Heating-AEG-1
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.55	3	\$0.37	4%	28%	\$76.77	20.88	21.58	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.37	4%	28%	\$76.77	1.61	1.65	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	New	0.05	3	\$0.37	4%	28%	\$76.77	2.15	2.10	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	New	0.06	3	\$0.37	4%	28%	\$76.77	2.77	2.51	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	New	0.28	3	\$1.88	100%	100%	\$330.71	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	New	0.68	3	\$1.88	100%	100%	\$330.71	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	New	0.20	3	\$1.88	100%	100%	\$330.71	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	New	0.09	3	\$1.88	100%	100%	\$330.71	0.00	0.00	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	New	0.63	3	\$1.88	100%	100%	\$330.71	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$1.88	100%	100%	\$330.71	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	New	0.12	3	\$1.88	100%	100%	\$330.71	0.00	0.00	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	New	0.28	3	\$0.60	0%	0%	\$104.98	0.00	0.00	COM_RCX-HVAC-AEG-1

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Health	Heating	Retrocommissioning	sqft	New	0.68	3	\$0.60	0%	0%	\$104.98	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	New	0.20	3	\$0.60	0%	0%	\$104.98	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	New	0.09	3	\$0.60	0%	0%	\$104.98	0.00	0.00	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	New	0.63	3	\$0.60	0%	0%	\$104.98	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.60	0%	0%	\$104.98	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Refrigeration	Retrocommissioning	sqft	New	0.12	3	\$0.60	0%	0%	\$104.98	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.44	10	\$0.09	0%	0%	\$31.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.38	10	\$1.12	0%	0%	\$452.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.10	3	\$0.24	0%	0%	\$872.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.18	10	\$3.24	0%	0%	\$2,682.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.04	10	\$0.70	0%	0%	\$2,911.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	New	216.71	16	\$75.53	20%	75%	\$41.93	2.86	2.86	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	15,814.57	25	\$24,330.10	0%	75%	\$165.34	175.89	175.89	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$136.90	9.80	10.13	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.59	45	\$0.84	15%	35%	\$136.90	77.10	79.32	Building Energy Simulation Tool

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College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$136.90	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.39	20	\$0.86	15%	35%	\$251.39	99.83	103.16	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$251.39	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$251.39	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.29	20	\$0.81	45%	50%	\$3,562.48	36.94	38.18	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.22	20	\$0.81	45%	50%	\$3,562.48	-7.24	-7.45	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$3,562.48	-5.63	-5.71	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.27	45	\$1.70	15%	35%	\$269.95	-42.47	-43.89	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.76	45	\$1.70	15%	35%	\$269.95	30.56	31.44	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.14	45	\$1.70	15%	35%	\$269.95	23.75	24.11	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	17.95	18	\$0.59	15%	50%	\$19.93	63.57	65.69	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-12.11	18	\$0.59	15%	50%	\$19.93	-10.99	-11.31	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.18	18	\$0.59	15%	50%	\$19.93	-8.54	-8.67	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.03	30	\$37.07	48%	48%	\$73.48	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	42.30	30	\$37.07	48%	48%	\$73.48	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.39	30	\$37.07	48%	48%	\$73.48	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	12,121.01	10	\$914.46	15%	75%	\$11.91	131.95	138.77	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	348.30	15	\$248.07	15%	75%	\$92.34	527.30	554.57	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	802.68	15	\$263.92	15%	75%	\$42.63	121.52	127.80	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	79.28	5	\$267.96	18%	75%	\$831.70	306.18	318.78	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.29	15	\$0.05	5%	15%	\$22.50	81.09	85.29	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.16	14	\$5.25	3%	75%	\$602.33	328.14	342.63	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.29	18	\$0.26	15%	20%	\$104.13	40.29	40.89	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	517.88	15	\$189.00	13%	25%	\$46.16	52.58	53.80	VENT_PMSM-Ventilation-AEG-2016-2
College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	186.62	15	\$1,273.23	13%	50%	\$863.01	59.56	60.94	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.19	15	\$0.08	13%	50%	\$52.14	209.30	214.17	FAN_VSD-Ventilation-MIDATL-v3.0-13
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	10%	25%	\$1,700.91	7.55	7.73	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.34	15	\$0.76	3%	8%	\$49.49	45.80	47.82	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.63	15	\$0.76	3%	8%	\$49.49	92.43	94.58	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,200.02	15	\$7,501.21	15%	25%	\$45.96	76.58	80.55	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	17,802.90	15	\$7,501.21	15%	25%	\$45.96	109.25	114.07	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	14.98	15.47	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	Existing	174.66	15	\$410.87	15%	45%	\$298.89	273.80	278.96	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	92.59	15	\$698.92	15%	75%	\$959.11	278.91	282.89	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	155.17	20	\$979.24	15%	25%	\$138.04	5.29	5.56	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	632.45	20	\$979.24	15%	25%	\$138.04	62.98	62.98	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.47	5	\$0.75	30%	40%	\$90.61	117.88	121.81	STAT_WIFI-AII-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.34	5	\$0.75	30%	40%	\$90.61	86.82	89.32	STAT_WIFI-AII-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.24	5	\$0.75	30%	40%	\$90.61	67.47	68.47	STAT_WIFI-AII-7PLN-v2-1
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	169.26	10	\$8.63	25%	65%	\$8.07	45.04	47.26	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	185.99	10	\$17.56	25%	65%	(\$90.46)	24.74	25.96	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	36.75	10	\$16.82	25%	65%	(\$151.89)	4.81	5.02	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	626.43	11	\$37.97	15%	20%	\$9.25	28.42	29.16	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	688.15	15	\$15.38	16%	75%	\$2.90	111.17	115.98	AEG-BEST

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College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	782.50	4	\$75.87	25%	40%	(\$77.74)	76.87	80.20	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	101.15	2	\$5.13	15%	75%	\$26.66	60.44	63.05	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.81	20	\$258.33	1%	30%	\$2,322.27	192.40	200.72	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.52	15	\$0.36	3%	23%	\$91.25	391.42	402.93	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.72	15	\$0.60	3%	23%	\$107.54	547.99	564.10	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	323.10	15	\$56.14	1%	3%	\$22.82	10.17	10.83	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.63	15	\$65.99	1%	3%	\$164.65	0.45	0.48	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,553.86	11	\$26.48	15%	30%	\$1.14	156.23	164.56	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	363.91	16	\$1,864.95	5%	15%	\$649.35	106.65	112.34	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.53	9	\$0.65	15%	25%	\$209.65	131.73	139.26	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	48.10	8	\$56.85	15%	25%	\$216.90	70.02	74.02	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	60.15	7	\$3,486.31	15%	30%	\$9,999.00	131.32	138.83	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	13.91	12	\$50.74	4%	25%	\$528.63	1.70	1.75	RFG_ASH-Refrigeration-7PLN-v6-1

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College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.55	4	\$24.51	4%	25%	\$1,433.93	0.52	0.59	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	22.21	15	\$347.21	0%	0%	\$2,122.60	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	18.05	2	\$10.74	4%	25%	\$464.84	0.62	0.99	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.55	15	\$508.61	2%	13%	\$9,999.00	9.40	10.20	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.65	15	\$5,552.98	2%	13%	\$9,999.00	13.74	14.91	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	69.76	15	\$305.13	4%	25%	\$1,269.48	7.95	8.63	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	279.36	15	\$539.09	2%	13%	\$262.02	11.94	12.96	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	586.95	10	\$449.00	0%	0%	\$126.45	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	31.97	16	\$153.90	4%	25%	\$649.88	1.25	1.39	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	11.50	15	\$135.00	2%	13%	\$1,632.62	0.06	0.06	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	219.06	16	\$105.92	4%	25%	\$74.19	2.89	3.64	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	168.63	10	\$521.11	4%	25%	\$594.50	2.22	2.80	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	57.88	8	\$18,135.52	4%	25%	\$9,999.00	0.07	0.11	RFG_ADC-Refrigeration-PGE-R6-1

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College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	118.92	12	\$605.15	4%	25%	\$773.09	10.16	11.03	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.21	8	\$15.90	0%	0%	\$465.19	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.64	8	\$3.87	0%	0%	\$1,098.43	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.25	5	\$49.37	0%	0%	\$5,462.75	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,647.70	5	\$288.64	25%	75%	\$43.74	14.26	14.75	VEND_CTRL-Miscellaneous-SCE-17R0-31
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,840.70	18	\$8,815.42	25%	50%	\$268.08	108.20	109.82	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	141.21	15	\$335.00	0%	0%	\$60.60	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	551.63	15	\$335.00	0%	0%	\$60.60	0.00	0.00	AEG - BEST
College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	23.67	4	\$37.32	10%	50%	\$419.48	67.95	61.51	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.69	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.69	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$21.91	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,474.87	18	\$4,231.40	0%	5%	\$199.69	11.55	11.72	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	710.06	12	\$2,098.57	5%	7%	\$427.78	0.24	0.25	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-1
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	146.03	10	\$19.59	15%	75%	\$20.90	7.35	7.40	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	65.99	5	\$37,813.23	15%	75%	\$9,999.00	1.50	1.50	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.30	0%	5%	\$5,278.16	0.77	0.81	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	170.80	7	\$423.28	0%	5%	(\$524.00)	0.47	0.49	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.23	7	\$423.28	0%	5%	(\$524.00)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.23	7	\$423.28	0%	5%	(\$524.00)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	26,231.40	15	\$1,114.41	0%	5%	\$45.93	71.58	74.68	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	154.47	15	\$1,114.41	0%	5%	\$45.93	0.08	0.09	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,367.45	6	\$37.07	1%	3%	\$5.67	9.66	9.66	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.12	0%	5%	\$1,095.42	1.68	1.70	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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College	Cooling	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$87.11	0.00	0.00	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	Existing	2.01	25	\$4.24	0%	0%	\$87.11	0.00	0.00	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.42	25	\$4.24	0%	0%	\$87.11	0.00	0.00	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$87.11	0.00	0.00	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.60	25	\$4.24	0%	0%	\$87.11	0.00	0.00	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.38	25	\$4.24	0%	0%	\$87.11	0.00	0.00	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.10	3%	29%	\$42.59	91.36	96.09	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	Existing	0.36	3	\$0.10	3%	29%	\$42.59	67.29	70.26	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	Existing	0.07	3	\$0.10	3%	29%	\$42.59	52.29	53.51	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.10	3%	29%	\$42.59	37.38	39.00	COM_SEM-Water Heating-AEG-1
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.16	3	\$0.10	3%	29%	\$42.59	119.64	126.57	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.04	3	\$0.10	3%	29%	\$42.59	33.79	35.72	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.10	3%	29%	\$42.59	5.84	5.11	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.10	3%	29%	\$42.59	28.92	26.18	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.58	0%	0%	\$204.76	0.00	0.00	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	Existing	0.50	3	\$0.58	0%	0%	\$204.76	0.00	0.00	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	Existing	0.09	3	\$0.58	0%	0%	\$204.76	0.00	0.00	COM_CX-HVAC-AEG-1

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College	Water Heating	Commissioning	sqft	Existing	0.04	3	\$0.58	0%	0%	\$204.76	0.00	0.00	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	Existing	0.18	3	\$0.58	0%	0%	\$204.76	0.00	0.00	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$0.58	0%	0%	\$204.76	0.00	0.00	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.58	0%	0%	\$204.76	0.00	0.00	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	Existing	0.18	3	\$0.19	11%	52%	\$65.00	199.48	209.81	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	Existing	0.50	3	\$0.19	11%	52%	\$65.00	146.91	153.40	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	Existing	0.09	3	\$0.19	11%	52%	\$65.00	114.17	116.83	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.19	11%	52%	\$65.00	27.21	28.38	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.18	3	\$0.19	11%	52%	\$65.00	217.69	230.30	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.19	11%	52%	\$65.00	61.48	64.99	COM_RCX-Lighting-AEG-1
College	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.19	11%	52%	\$65.00	21.25	18.59	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$109.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.12	0%	0%	\$3,691.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$7,117.50	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	Existing	96.82	16	\$75.53	20%	75%	\$93.85	8.39	8.39	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,030.96	25	\$1,704.50	0%	75%	\$182.78	45.28	45.55	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$784.44	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.10	45	\$0.84	15%	50%	\$784.44	9.03	9.04	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$784.44	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.24	20	\$0.86	15%	50%	\$391.83	41.80	41.84	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$391.83	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$391.83	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.81	45%	50%	\$3,415.23	3.91	3.92	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$3,415.23	-0.55	-0.55	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$3,415.23	-0.49	-0.49	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$2,812.93	-1.86	-1.86	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$2,812.93	1.70	1.70	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,812.93	1.50	1.50	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	11.26	18	\$0.59	15%	35%	\$9,999.00	8.54	8.55	Building Energy Simulation Tool

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College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-12.01	18	\$0.59	15%	35%	\$9,999.00	-2.31	-2.31	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-2.52	18	\$0.59	15%	35%	\$9,999.00	-2.04	-2.04	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.58	30	\$37.07	66%	66%	\$84.88	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	New	36.07	30	\$37.07	66%	66%	\$84.88	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.36	30	\$37.07	66%	66%	\$84.88	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	6,934.77	10	\$914.46	15%	75%	\$19.89	14.04	14.04	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	199.27	15	\$248.07	15%	75%	\$154.24	69.59	69.59	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	459.24	15	\$263.92	15%	75%	\$71.21	16.04	16.04	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	50.19	5	\$267.96	18%	75%	\$1,273.14	20.78	20.85	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.19	15	\$0.05	10%	15%	\$33.22	6.05	6.06	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.99	14	\$5.25	75%	75%	\$683.55	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.28	18	\$0.26	15%	20%	\$103.08	14.45	14.45	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	512.46	15	\$189.00	19%	25%	\$45.68	5.47	5.47	VENT_PMSM-Ventilation-AEG-2016-2

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College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	184.67	15	\$1,273.23	19%	50%	\$853.90	10.87	10.87	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.18	15	\$0.08	19%	50%	\$51.58	38.20	38.19	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	25%	\$1,683.70	1.66	1.65	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.17	15	\$0.76	3%	8%	\$52.91	9.04	9.05	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.62	15	\$0.76	3%	8%	\$52.91	20.25	20.25	HVAC_DOAS-Heating-7PLN-v5-1
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,082.92	15	\$7,501.21	15%	25%	\$54.06	11.42	11.45	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,179.64	15	\$7,501.21	15%	25%	\$54.06	21.11	21.15	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	New	6.00	3	\$33.20	15%	45%	\$1,982.11	0.62	0.62	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	New	121.45	15	\$410.87	15%	45%	\$422.21	66.99	67.13	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	New	64.38	15	\$698.92	15%	75%	\$1,354.81	81.50	81.62	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	122.90	20	\$979.24	15%	25%	\$148.58	1.22	1.22	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	600.81	20	\$979.24	15%	25%	\$148.58	15.87	15.87	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	30%	40%	\$106.47	8.95	8.97	STAT_WIFI-AII-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.14	5	\$0.75	30%	40%	\$106.47	8.54	8.56	STAT_WIFI-AII-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.24	5	\$0.75	30%	40%	\$106.47	7.56	7.56	STAT_WIFI-AII-7PLN-v2-1

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College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	163.49	10	\$8.63	25%	65%	\$7.96	7.02	7.02	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	179.64	10	\$17.56	25%	65%	(\$89.29)	3.86	3.86	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	35.50	10	\$16.82	25%	65%	(\$149.93)	0.86	0.86	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$9.13	7.73	7.73	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	664.67	15	\$15.38	1%	75%	\$2.87	30.78	30.78	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	755.80	4	\$75.87	25%	40%	(\$76.73)	6.73	6.73	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	2.81	2.81	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.37	20	\$258.33	1%	30%	\$2,292.24	43.66	43.66	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.49	15	\$0.36	11%	23%	\$91.10	155.61	156.08	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.69	15	\$0.60	11%	23%	\$107.36	217.86	218.51	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	305.49	15	\$56.14	1%	3%	\$23.01	1.91	1.92	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.57	15	\$65.99	1%	3%	\$154.24	0.08	0.08	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,290.30	11	\$26.48	15%	30%	\$1.17	28.56	28.75	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	336.92	16	\$1,864.95	5%	15%	\$667.61	23.27	23.41	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.42	9	\$0.65	15%	25%	\$252.78	18.07	18.22	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	38.04	8	\$56.85	15%	25%	\$261.53	8.81	8.89	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	47.56	7	\$3,486.31	15%	30%	\$9,999.00	14.99	15.13	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	13.10	12	\$50.74	4%	25%	\$537.02	0.32	0.32	RFG_ASH-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.91	4	\$24.51	4%	25%	\$1,527.13	0.04	0.05	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	20.66	15	\$347.21	0%	0%	\$2,169.77	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	14.85	2	\$10.74	4%	25%	\$538.09	0.03	0.04	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.51	15	\$508.61	2%	13%	\$9,999.00	1.99	2.06	RFG_HECOMP-Refrigeration-AEO17-3
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.97	15	\$5,552.98	2%	13%	\$9,999.00	2.92	3.01	RFG_HECOMP-Refrigeration-AEO17-5
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	64.89	15	\$305.13	4%	25%	\$1,297.69	1.69	1.74	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	259.86	15	\$539.09	2%	13%	\$267.84	2.53	2.61	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	545.97	10	\$449.00	0%	0%	\$129.26	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	29.35	16	\$153.90	4%	25%	\$675.05	0.27	0.28	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	10.56	15	\$135.00	2%	13%	\$1,695.86	0.01	0.01	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	190.78	16	\$105.92	4%	25%	\$80.49	0.66	0.72	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	146.87	10	\$521.11	4%	25%	\$644.99	0.39	0.43	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.70	8	\$647.70	4%	25%	\$9,999.00	0.01	0.01	RFG_ASH-Refrigeration-NMTRM-2016-1
College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	110.61	12	\$5,648.09	4%	25%	\$7,375.82	1.93	1.99	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.83	8	\$15.90	0%	0%	\$473.11	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.60	8	\$3.87	0%	0%	\$1,117.16	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.11	5	\$49.37	0%	0%	\$5,556.94	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,538.39	5	\$288.64	25%	75%	\$44.57	1.35	1.35	VEND_CTRL-Miscellaneous-SCE-17R0-41
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,798.83	18	\$8,815.42	25%	50%	\$265.37	38.80	38.79	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	111.84	15	\$335.00	0%	0%	\$65.20	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	524.73	15	\$335.00	0%	0%	\$65.20	0.00	0.00	AEG - BEST

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College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	38.58	4	\$37.32	10%	50%	\$256.66	9.29	8.42	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$5.95	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$5.95	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$5.95	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$9.55	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,447.88	18	\$4,231.40	0%	5%	\$197.67	4.14	4.14	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	670.27	12	\$2,098.57	5%	7%	\$434.03	0.05	0.05	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
College	Miscellaneous	Pool Pump - Timer	perBldg	New	140.56	10	\$19.59	15%	75%	\$21.02	1.80	1.80	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	New	65.09	5	\$37,813.23	15%	75%	\$9,999.00	0.15	0.15	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.28	0%	5%	\$4,879.56	0.14	0.14	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	164.97	7	\$423.28	0%	5%	(\$517.62)	0.06	0.06	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.09	7	\$423.28	0%	5%	(\$517.62)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.09	7	\$423.28	0%	5%	(\$517.62)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	25,336.47	15	\$1,114.41	0%	5%	\$45.35	15.88	15.88	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	142.95	15	\$1,114.41	0%	5%	\$45.35	0.02	0.02	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,367.45	6	\$37.07	1%	3%	\$5.67	1.68	1.68	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.11	0%	5%	\$990.89	0.37	0.37	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
College	Cooling	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	30%	\$83.01	68.92	68.97	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	New	2.00	25	\$4.24	10%	30%	\$83.01	65.78	65.83	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	New	0.42	25	\$4.24	10%	30%	\$83.01	58.20	58.19	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	New	0.55	25	\$4.24	10%	30%	\$83.01	41.95	41.95	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	New	1.63	25	\$4.24	10%	30%	\$83.01	887.85	890.70	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.38	25	\$4.24	10%	30%	\$83.01	157.13	157.73	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	New	0.08	3	\$0.11	3%	29%	\$41.67	4.14	4.16	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	New	0.31	3	\$0.11	3%	29%	\$41.67	3.95	3.97	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	New	0.07	3	\$0.11	3%	29%	\$41.67	3.50	3.50	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.11	3%	29%	\$41.67	2.52	2.52	COM_SEM-Water Heating-AEG-1

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College	Interior Lighting	Strategic Energy Management	sqft	New	0.25	3	\$0.11	3%	29%	\$41.67	13.34	13.48	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.11	3%	29%	\$41.67	3.15	3.18	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.11	3%	29%	\$41.67	0.59	0.50	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	New	0.05	3	\$0.11	3%	29%	\$41.67	3.04	2.75	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	New	0.11	3	\$0.56	100%	100%	\$191.44	0.00	0.00	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	New	0.43	3	\$0.56	100%	100%	\$191.44	0.00	0.00	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	New	0.09	3	\$0.56	100%	100%	\$191.44	0.00	0.00	COM_CX-HVAC-AEG-1
College	Water Heating	Commissioning	sqft	New	0.04	3	\$0.56	100%	100%	\$191.44	0.00	0.00	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	New	0.29	3	\$0.56	100%	100%	\$191.44	0.00	0.00	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$0.56	100%	100%	\$191.44	0.00	0.00	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.56	100%	100%	\$191.44	0.00	0.00	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	New	0.11	3	\$0.18	0%	0%	\$60.77	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	New	0.43	3	\$0.18	0%	0%	\$60.77	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	New	0.09	3	\$0.18	0%	0%	\$60.77	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.18	0%	0%	\$60.77	0.00	0.00	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	New	0.29	3	\$0.18	0%	0%	\$60.77	0.00	0.00	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.18	0%	0%	\$60.77	0.00	0.00	COM_RCX-Lighting-AEG-1

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College	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.18	0%	0%	\$60.77	0.00	0.00	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.20	10	\$0.09	0%	0%	\$65.83	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.07	10	\$1.12	0%	0%	\$2,382.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.02	3	\$0.24	0%	0%	\$4,593.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	New	96.82	16	\$75.53	20%	75%	\$93.85	1.58	1.58	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,085.45	25	\$1,669.92	0%	75%	\$165.34	17.86	17.86	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$264.86	9.06	9.36	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.31	45	\$0.84	15%	35%	\$264.86	71.72	74.11	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$264.86	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.18	20	\$0.86	15%	35%	\$543.54	92.26	95.31	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$543.54	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$543.54	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.14	20	\$0.81	45%	50%	\$9,999.00	34.14	35.27	Building Energy Simulation Tool

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School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.12	20	\$0.81	45%	50%	\$9,999.00	-6.74	-6.96	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.81	45%	50%	\$9,999.00	-6.77	-6.87	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.12	45	\$1.70	15%	35%	\$508.38	-39.25	-40.55	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.40	45	\$1.70	15%	35%	\$508.38	28.43	29.38	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.06	45	\$1.70	15%	35%	\$508.38	28.56	28.98	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	8.30	18	\$0.59	15%	50%	\$74.96	58.75	60.69	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.32	18	\$0.59	15%	50%	\$74.96	-10.23	-10.57	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.02	18	\$0.59	15%	50%	\$74.96	-10.27	-10.43	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.25	30	\$37.07	48%	48%	\$144.94	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	22.06	30	\$37.07	48%	48%	\$144.94	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.05	30	\$37.07	48%	48%	\$144.94	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,605.97	10	\$914.46	15%	75%	\$25.75	120.94	127.18	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	161.09	15	\$248.07	15%	75%	\$199.65	483.31	508.25	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	371.24	15	\$263.92	15%	75%	\$92.17	111.38	117.13	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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School	Cooling	HVAC - Economizer	HP cool	Existing	36.67	5	\$267.96	18%	75%	\$1,798.28	280.63	292.16	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.14	15	\$0.05	5%	15%	\$48.65	74.32	78.16	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.71	14	\$5.25	3%	75%	\$992.47	302.77	318.31	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.13	18	\$0.26	15%	20%	\$223.34	48.44	49.16	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	241.46	15	\$189.00	13%	25%	\$99.01	62.71	64.16	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	87.01	15	\$1,273.23	13%	50%	\$1,850.98	71.03	72.68	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.09	15	\$0.08	13%	50%	\$111.82	249.61	255.40	FAN_VSD-Ventilation-MIDATL-v3.0-13
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	24%	49%	\$3,648.10	15.15	15.50	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.70	15	\$0.76	8%	16%	\$98.63	71.06	74.71	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.29	15	\$0.76	8%	16%	\$98.63	185.36	189.66	HVAC_DOAS-Heating-7PLN-v5-1
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,480.01	15	\$7,501.21	15%	15%	\$90.10	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,286.48	15	\$7,501.21	15%	15%	\$90.10	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	29.64	30.62	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	Existing	80.78	15	\$410.87	15%	45%	\$646.25	252.94	257.70	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	42.82	15	\$698.92	15%	75%	\$2,073.75	258.61	262.28	RTU_PREC-Cooling-XCELCO-2017-18-1

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School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	71.76	20	\$979.24	15%	25%	\$261.83	4.86	5.11	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	342.93	20	\$979.24	15%	25%	\$261.83	48.14	48.14	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.22	5	\$0.75	30%	40%	\$181.34	108.93	112.54	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.70	5	\$0.75	30%	40%	\$181.34	80.76	83.45	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.11	5	\$0.75	30%	40%	\$181.34	81.12	82.32	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	80.49	10	\$8.63	25%	65%	\$16.96	49.46	51.89	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	88.45	10	\$17.56	25%	65%	(\$190.21)	27.18	28.51	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	17.48	10	\$16.82	25%	65%	(\$319.40)	5.29	5.52	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	626.43	11	\$37.97	15%	20%	\$9.25	31.52	32.33	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	327.25	15	\$15.38	16%	75%	\$6.11	122.28	127.55	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	372.12	4	\$75.87	25%	40%	(\$163.46)	84.55	88.20	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	101.15	2	\$5.13	15%	75%	\$26.66	66.48	69.34	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.81	20	\$258.33	1%	30%	\$2,322.27	211.62	220.74	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.33	15	\$0.36	3%	23%	\$141.69	652.30	670.07	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.46	15	\$0.60	3%	23%	\$166.99	913.22	938.09	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	229.96	15	\$56.14	1%	3%	\$33.28	17.65	19.28	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.60	15	\$65.99	1%	3%	\$171.01	0.42	0.45	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,457.62	11	\$26.48	15%	30%	\$1.65	277.05	291.08	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	251.66	16	\$1,864.95	5%	15%	\$938.23	189.13	198.71	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.46	9	\$0.65	15%	25%	\$235.51	251.61	264.37	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	43.88	8	\$56.85	15%	25%	\$236.26	133.73	140.51	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	54.86	7	\$3,486.31	15%	30%	\$9,999.00	250.83	263.55	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	14.31	12	\$50.74	4%	25%	\$513.85	10.55	10.86	RFG_ASH-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.64	4	\$24.51	4%	25%	\$1,429.64	2.94	3.40	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	22.90	15	\$347.21	0%	0%	\$2,039.14	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	18.88	2	\$10.74	4%	25%	\$440.58	3.29	5.44	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.57	15	\$508.61	2%	13%	\$9,999.00	57.72	61.93	RFG_HECOMP-Refrigeration-AEO15-4
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.95	15	\$5,552.98	2%	13%	\$9,999.00	84.42	90.58	RFG_HECOMP-Refrigeration-AEO15-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	71.92	15	\$305.13	4%	25%	\$1,219.56	48.84	52.41	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	288.04	15	\$539.09	2%	13%	\$251.71	73.35	78.70	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	605.17	10	\$449.00	0%	0%	\$121.48	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	32.92	16	\$153.90	4%	25%	\$624.13	7.70	8.48	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	11.84	15	\$135.00	2%	13%	\$1,567.94	0.35	0.38	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	226.07	16	\$105.92	4%	25%	\$71.65	15.87	20.25	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	174.03	10	\$521.11	4%	25%	\$574.19	12.22	15.59	RFG_DDEF-Refrigeration-VTTRM-1
School	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	60.55	8	\$18,135.52	4%	25%	\$9,999.00	0.38	0.62	RFG_ADC-Refrigeration-PGE-R6-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	122.61	12	\$605.15	4%	25%	\$742.69	62.44	67.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.39	8	\$15.90	0%	0%	\$452.18	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.66	8	\$3.87	0%	0%	\$1,067.73	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.31	5	\$49.37	0%	0%	\$5,310.06	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,844.55	5	\$288.64	25%	75%	\$39.07	96.21	99.52	VEND_CTRL-Miscellaneous-SCE-17R0-28
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,790.71	18	\$8,815.42	25%	50%	\$574.97	130.10	132.03	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	65.31	15	\$335.00	0%	0%	\$117.48	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	291.64	15	\$335.00	0%	0%	\$117.48	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	15.26	4	\$37.32	10%	50%	\$642.20	114.78	102.11	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$4.18	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,153.89	18	\$4,231.40	0%	0%	\$428.30	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	263.87	10	\$19.59	15%	75%	\$11.56	2.28	2.29	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	59.63	5	\$37,813.23	15%	75%	\$9,999.00	0.10	0.10	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.18	0%	0%	\$6,590.65	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	81.22	7	\$423.28	0%	0%	(\$998.91)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	5.83	7	\$423.28	0%	0%	(\$998.91)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	5.83	7	\$423.28	0%	0%	(\$998.91)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	12,474.33	15	\$1,114.41	0%	0%	\$95.03	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	279.13	15	\$1,114.41	0%	0%	\$95.03	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,283.24	6	\$37.07	1%	3%	\$6.04	23.42	23.42	ESTAR_WC-Miscellaneous-7PLN-v6-1
School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.11	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.24	0%	0%	\$151.70	0.00	0.00	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	Existing	1.03	25	\$4.24	0%	0%	\$151.70	0.00	0.00	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.19	25	\$4.24	0%	0%	\$151.70	0.00	0.00	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.25	25	\$4.24	0%	0%	\$151.70	0.00	0.00	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.17	25	\$4.24	0%	0%	\$151.70	0.00	0.00	ADVNC-AII-RSRCH-1

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School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.30	25	\$4.24	0%	0%	\$151.70	0.00	0.00	ADVNC-All-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.03	2%	22%	\$24.48	64.41	67.74	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.03	2%	22%	\$24.48	47.76	50.21	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.03	2%	22%	\$24.48	47.97	49.08	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.03	2%	22%	\$24.48	31.63	32.99	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.03	2%	22%	\$24.48	159.97	172.53	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.03	2%	22%	\$24.48	49.64	52.16	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.03	2%	22%	\$24.48	24.58	23.86	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.03	2%	22%	\$24.48	37.58	33.43	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	Existing	0.08	3	\$0.18	0%	0%	\$109.06	0.00	0.00	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	Existing	0.26	3	\$0.18	0%	0%	\$109.06	0.00	0.00	COM_CX-HVAC-AEG-1
School	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.18	0%	0%	\$109.06	0.00	0.00	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.18	0%	0%	\$109.06	0.00	0.00	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.18	0%	0%	\$109.06	0.00	0.00	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.18	0%	0%	\$109.06	0.00	0.00	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	Existing	0.03	3	\$0.18	0%	0%	\$109.06	0.00	0.00	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	Existing	0.08	3	\$0.06	13%	56%	\$34.62	191.75	201.66	COM_RCX-HVAC-AEG-1

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School	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.06	13%	56%	\$34.62	142.17	149.46	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.06	13%	56%	\$34.62	142.80	146.11	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.06	13%	56%	\$34.62	31.38	32.74	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.06	13%	56%	\$34.62	396.84	428.00	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.06	13%	56%	\$34.62	123.15	129.39	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	Existing	0.03	3	\$0.06	13%	56%	\$34.62	121.93	118.40	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$160.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.11	10	\$1.12	0%	0%	\$1,615.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.03	3	\$0.24	0%	0%	\$3,115.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.05	10	\$3.24	0%	0%	\$9,581.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	Existing	88.17	16	\$75.53	20%	75%	\$103.06	19.55	19.55	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,654.66	25	\$2,735.68	0%	0%	\$182.78	0.00	0.00	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,531.46	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.05	45	\$0.84	15%	50%	\$1,531.46	7.65	7.66	Building Energy Simulation Tool

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School	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,531.46	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.11	20	\$0.86	15%	50%	\$847.24	35.47	35.50	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$847.24	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$847.24	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.81	45%	50%	\$9,075.50	3.32	3.32	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,075.50	-0.47	-0.47	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.81	45%	50%	\$9,075.50	-0.54	-0.54	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$5,444.10	-1.58	-1.58	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$1.70	15%	50%	\$5,444.10	1.44	1.44	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$5,444.10	1.66	1.66	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	5.21	18	\$0.59	15%	35%	\$9,999.00	7.25	7.26	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-6.15	18	\$0.59	15%	35%	\$9,999.00	-1.96	-1.96	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.17	18	\$0.59	15%	35%	\$9,999.00	-2.26	-2.26	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.12	30	\$37.07	66%	66%	\$168.85	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	New	18.48	30	\$37.07	66%	66%	\$168.85	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.03	30	\$37.07	66%	66%	\$168.85	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,207.33	10	\$914.46	15%	75%	\$43.01	11.88	11.88	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	92.16	15	\$248.07	15%	75%	\$333.49	58.91	58.91	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	212.40	15	\$263.92	15%	75%	\$153.96	13.58	13.58	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	23.21	5	\$267.96	18%	75%	\$2,752.88	17.57	17.63	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.09	15	\$0.05	10%	15%	\$71.83	5.12	5.13	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.59	14	\$5.25	75%	75%	\$1,140.37	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.13	18	\$0.26	15%	20%	\$221.08	15.95	15.95	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	238.94	15	\$189.00	19%	25%	\$97.97	6.03	6.03	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	86.10	15	\$1,273.23	19%	50%	\$1,831.43	11.97	11.97	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.09	15	\$0.08	19%	50%	\$110.64	42.08	42.07	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	24%	49%	\$3,611.17	3.07	3.07	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.60	15	\$0.76	8%	16%	\$106.63	12.84	12.87	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.29	15	\$0.76	8%	16%	\$106.63	37.51	37.50	HVAC_DOAS-Heating-7PLN-v5-1

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School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	963.18	15	\$7,501.21	15%	15%	\$106.78	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,779.41	15	\$7,501.21	15%	15%	\$106.78	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	New	6.00	3	\$33.20	15%	45%	\$1,982.30	1.13	1.14	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	New	56.15	15	\$410.87	15%	45%	\$912.97	56.78	56.90	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	New	29.77	15	\$698.92	15%	75%	\$2,929.60	69.16	69.26	RTU_PREC-Cooling-XCELCO-2017-18-1
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	56.84	20	\$979.24	15%	25%	\$281.04	1.03	1.03	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	325.77	20	\$979.24	15%	25%	\$281.04	11.17	11.17	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	30%	40%	\$214.36	7.60	7.61	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.58	5	\$0.75	30%	40%	\$214.36	7.24	7.26	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.11	5	\$0.75	30%	40%	\$214.36	8.35	8.35	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	77.75	10	\$8.63	25%	65%	\$16.74	7.13	7.13	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	85.43	10	\$17.56	25%	65%	(\$187.75)	3.92	3.92	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	16.88	10	\$16.82	25%	65%	(\$315.27)	0.87	0.87	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$9.13	7.88	7.88	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	316.08	15	\$15.38	1%	75%	\$6.03	31.27	31.27	AEG-BEST

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School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	359.42	4	\$75.87	25%	40%	(\$161.35)	6.83	6.83	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	2.86	2.86	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.37	20	\$258.33	1%	30%	\$2,292.24	44.36	44.36	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.32	15	\$0.36	11%	23%	\$141.43	238.27	238.71	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.44	15	\$0.60	11%	23%	\$166.69	333.57	334.20	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	214.77	15	\$56.14	1%	3%	\$34.09	3.02	3.08	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.40	15	\$65.99	1%	3%	\$161.16	0.07	0.07	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,275.36	11	\$26.48	15%	30%	\$1.70	46.76	46.95	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	232.99	16	\$1,864.95	5%	15%	\$964.45	38.12	38.26	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.38	9	\$0.65	15%	25%	\$276.85	32.64	32.78	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	35.56	8	\$56.85	15%	25%	\$277.74	15.92	15.99	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	44.47	7	\$3,486.31	15%	30%	\$9,999.00	27.08	27.20	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	13.47	12	\$50.74	4%	25%	\$522.01	1.86	1.86	RFG_ASH-Refrigeration-7PLN-v6-1

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School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	5.02	4	\$24.51	4%	25%	\$1,517.21	0.23	0.24	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	21.29	15	\$347.21	0%	0%	\$2,086.78	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	15.49	2	\$10.74	4%	25%	\$514.09	0.13	0.20	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.53	15	\$508.61	2%	13%	\$9,999.00	11.35	11.61	RFG_HECOMP-Refrigeration-AEO17-3
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	9.25	15	\$5,552.98	2%	13%	\$9,999.00	16.61	16.98	RFG_HECOMP-Refrigeration-AEO17-5
School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	66.87	15	\$305.13	4%	25%	\$1,248.06	9.61	9.82	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	267.81	15	\$539.09	2%	13%	\$257.59	14.43	14.75	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	562.67	10	\$449.00	0%	0%	\$124.32	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	30.27	16	\$153.90	4%	25%	\$645.85	1.55	1.61	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	10.89	15	\$135.00	2%	13%	\$1,622.50	0.07	0.07	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	197.14	16	\$105.92	4%	25%	\$77.71	3.27	3.60	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	151.76	10	\$521.11	4%	25%	\$622.68	1.95	2.20	RFG_DDEF-Refrigeration-VTTRM-1

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School	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.77	8	\$647.70	4%	25%	\$9,999.00	0.05	0.07	RFG_ASH-Refrigeration-NMTRM-2016-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	114.00	12	\$5,648.09	4%	25%	\$7,093.71	11.03	11.30	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	5.99	8	\$15.90	0%	0%	\$459.89	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.62	8	\$3.87	0%	0%	\$1,085.93	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.17	5	\$49.37	0%	0%	\$5,401.62	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,722.18	5	\$288.64	25%	75%	\$39.81	8.78	8.78	VEND_CTRL-Miscellaneous-SCE-17R0-41
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,771.22	18	\$8,815.42	25%	50%	\$569.15	42.84	42.83	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	51.73	15	\$335.00	0%	0%	\$126.06	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	277.54	15	\$335.00	0%	0%	\$126.06	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	25.81	4	\$37.32	10%	50%	\$380.33	14.91	13.33	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.75	0.00	0.00	com-datacenters-7p_v5p.xlsx

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School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.75	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.75	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$1.89	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,141.33	18	\$4,231.40	0%	0%	\$423.96	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
School	Miscellaneous	Pool Pump - Timer	perBldg	New	253.99	10	\$19.59	15%	75%	\$11.63	0.51	0.51	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	New	58.81	5	\$37,813.23	15%	75%	\$9,999.00	0.01	0.01	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.16	0%	0%	\$6,045.52	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	78.45	7	\$423.28	0%	0%	(\$988.63)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	5.58	7	\$423.28	0%	0%	(\$988.63)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	5.58	7	\$423.28	0%	0%	(\$988.63)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	12,048.75	15	\$1,114.41	0%	0%	\$93.89	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	258.31	15	\$1,114.41	0%	0%	\$93.89	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,283.24	6	\$37.07	1%	3%	\$6.04	3.74	3.74	ESTAR_WC-Miscellaneous-7PLN-v6-1

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School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.10	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	New	0.25	25	\$4.24	10%	25%	\$144.28	44.21	44.25	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	New	1.03	25	\$4.24	10%	25%	\$144.28	42.13	42.16	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$144.28	48.58	48.58	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	25%	\$144.28	32.30	32.30	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	New	1.19	25	\$4.24	10%	25%	\$144.28	1,106.74	1,112.69	ADVNC-AII-RSRCH-1
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.30	25	\$4.24	10%	25%	\$144.28	223.74	224.22	ADVNC-AII-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	New	0.04	3	\$0.04	2%	22%	\$25.74	2.69	2.70	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	New	0.16	3	\$0.04	2%	22%	\$25.74	2.57	2.58	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.04	2%	22%	\$25.74	2.96	2.96	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.04	2%	22%	\$25.74	1.97	1.97	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	New	0.18	3	\$0.04	2%	22%	\$25.74	16.85	17.43	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.04	2%	22%	\$25.74	4.54	4.56	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.04	2%	22%	\$25.74	2.47	2.34	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.04	2%	22%	\$25.74	3.76	3.35	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	New	0.05	3	\$0.19	100%	100%	\$105.60	0.00	0.00	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	New	0.22	3	\$0.19	100%	100%	\$105.60	0.00	0.00	COM_CX-HVAC-AEG-1

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School	Ventilation	Commissioning	sqft	New	0.04	3	\$0.19	100%	100%	\$105.60	0.00	0.00	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	New	0.02	3	\$0.19	100%	100%	\$105.60	0.00	0.00	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	New	0.21	3	\$0.19	100%	100%	\$105.60	0.00	0.00	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.19	100%	100%	\$105.60	0.00	0.00	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.19	100%	100%	\$105.60	0.00	0.00	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	New	0.05	3	\$0.06	0%	0%	\$33.52	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Heating	Retrocommissioning	sqft	New	0.22	3	\$0.06	0%	0%	\$33.52	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.06	0%	0%	\$33.52	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.06	0%	0%	\$33.52	0.00	0.00	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	New	0.21	3	\$0.06	0%	0%	\$33.52	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.06	0%	0%	\$33.52	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.06	0%	0%	\$33.52	0.00	0.00	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.15	10	\$0.09	0%	0%	\$93.86	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.17	10	\$1.12	0%	0%	\$971.07	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.04	3	\$0.24	0%	0%	\$1,872.40	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.08	10	\$3.24	0%	0%	\$5,758.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$6,248.19	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	New	88.17	16	\$75.53	20%	75%	\$103.06	3.40	3.40	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,760.50	25	\$2,708.46	0%	0%	\$165.34	0.00	0.00	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$388.02	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.20	45	\$0.84	15%	35%	\$388.02	49.84	50.04	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$388.02	1.96	1.99	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.15	20	\$0.81	45%	50%	\$9,999.00	9.81	10.18	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.14	20	\$0.81	45%	50%	\$9,999.00	-8.31	-8.34	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.05	20	\$0.81	45%	50%	\$9,999.00	-3.71	-3.75	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.00	45	\$1.70	15%	35%	\$1,306.55	-0.33	-0.34	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.10	45	\$1.70	15%	35%	\$1,306.55	9.09	9.12	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.03	45	\$1.70	15%	35%	\$1,306.55	4.06	4.10	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	1.82	30	\$37.07	48%	48%	\$383.68	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	6.88	30	\$37.07	48%	48%	\$383.68	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.37	30	\$37.07	48%	48%	\$383.68	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,167.13	10	\$914.46	15%	75%	\$43.96	4.52	4.56	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	67.25	15	\$248.07	15%	75%	\$461.33	13.34	13.47	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	165.34	15	\$263.92	15%	75%	\$199.63	3.28	3.31	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	23.99	15	\$248.07	15%	75%	\$1,281.47	3.79	3.79	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	5,697.64	10	\$1,796.53	15%	75%	\$137.52	6.47	6.47	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	43.28	5	\$267.96	18%	75%	\$1,503.65	21.51	22.08	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.15	15	\$0.05	5%	15%	\$44.15	21.10	22.33	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.03	14	\$5.25	3%	75%	\$655.89	196.23	197.37	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	18	\$0.26	15%	20%	\$166.66	14.15	14.30	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	2,169.10	15	\$189.00	13%	25%	\$10.96	18.08	18.39	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	781.64	15	\$1,273.23	13%	50%	\$204.88	20.48	20.82	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.12	15	\$0.01	13%	50%	\$12.38	71.98	73.18	FAN_VSD-Ventilation-MIDATL-v3.0-13
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	3%	21%	\$2,722.26	3.27	3.33	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.43	15	\$0.76	1%	7%	\$115.72	34.51	34.71	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.39	15	\$0.76	1%	7%	\$115.72	40.05	40.72	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,642.82	15	\$7,501.21	15%	30%	\$127.48	29.89	31.64	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	5,756.21	15	\$7,501.21	15%	30%	\$127.48	97.99	98.57	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.56	1.90	1.96	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	Existing	155.08	15	\$410.87	15%	45%	\$336.64	31.63	32.21	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	82.21	15	\$698.92	15%	75%	\$1,080.23	32.52	32.97	RTU_PREC-Cooling-XCELCO-2017-18-1
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	137.80	20	\$1,419.90	15%	75%	\$429.14	137.04	144.18	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	233.22	20	\$1,419.90	15%	75%	\$429.14	335.88	335.88	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.24	5	\$0.75	30%	40%	\$221.81	31.32	32.48	STAT_WIFI-AII-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.43	5	\$0.75	30%	40%	\$221.81	53.01	53.22	STAT_WIFI-AII-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.15	5	\$0.75	30%	40%	\$221.81	23.69	23.94	STAT_WIFI-AII-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	434.86	10	\$8.63	25%	65%	\$3.13	34.43	36.02	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	477.83	10	\$17.56	25%	65%	(\$35.12)	18.92	19.79	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	94.42	10	\$16.82	25%	65%	(\$58.96)	3.69	3.84	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	627.50	11	\$37.97	15%	20%	\$9.21	22.27	22.81	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,768.13	15	\$15.38	16%	75%	\$1.13	85.31	88.78	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	2,010.36	4	\$75.87	25%	40%	(\$30.18)	58.98	61.38	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	101.33	2	\$5.13	15%	75%	\$26.54	46.37	48.26	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.84	20	\$258.33	1%	30%	\$2,311.70	147.65	153.66	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.36	3%	23%	\$191.86	100.42	107.59	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.35	15	\$0.60	3%	23%	\$226.12	140.59	150.62	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	428.18	15	\$56.14	1%	3%	\$18.90	3.81	4.50	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.62	15	\$65.99	1%	3%	\$180.80	0.10	0.11	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	740.59	11	\$26.48	15%	30%	\$5.47	17.93	18.80	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	75.84	16	\$1,864.95	5%	15%	\$3,111.97	12.24	12.84	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	6.33	9	\$0.65	15%	25%	\$17.22	124.95	131.04	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	203.84	8	\$56.85	15%	25%	\$50.60	66.41	69.65	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	254.88	7	\$3,486.31	15%	30%	\$2,715.22	124.56	130.63	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	56.11	12	\$50.74	0%	0%	\$131.05	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	14.11	4	\$24.51	0%	0%	\$518.77	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	75.15	15	\$347.21	0%	0%	\$611.43	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	70.14	2	\$10.74	0%	0%	\$120.27	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.86	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	32.64	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	236.02	15	\$305.13	0%	0%	\$365.68	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	945.20	15	\$539.09	0%	0%	\$75.48	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	1,985.89	10	\$449.00	0%	0%	\$36.43	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	126.39	16	\$153.90	0%	0%	\$157.25	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	45.45	15	\$135.00	0%	0%	\$395.05	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	481.80	16	\$105.92	0%	0%	\$30.17	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	370.89	10	\$521.11	0%	0%	\$241.73	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	224.94	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	402.34	12	\$605.15	0%	0%	\$222.69	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	25.05	8	\$15.90	0%	0%	\$115.32	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.58	8	\$3.87	0%	0%	\$272.31	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	9.08	5	\$49.37	0%	0%	\$1,354.24	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,834.83	5	\$288.64	25%	75%	\$39.28	43.55	45.04	VEND_CTRL-Miscellaneous-SCE-17R0-35
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,386.07	18	\$8,815.42	25%	50%	\$429.05	38.00	38.40	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	88.75	15	\$335.00	15%	75%	\$179.77	85.53	89.98	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	147.09	15	\$335.00	15%	75%	\$179.77	192.79	192.79	AEG - BEST

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Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.88	4	\$37.32	10%	50%	\$1,627.28	9.90	8.54	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.44	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.44	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.44	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$6.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,562.56	18	\$4,231.40	0%	0%	\$191.76	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	279.61	10	\$19.59	15%	75%	\$10.91	3.98	4.01	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	126.37	5	\$63,022.06	15%	75%	\$9,999.00	0.70	0.71	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	perBldg	Existing	727.37	10	\$28,402.65	0%	0%	\$6,530.78	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	438.81	7	\$423.28	0%	0%	(\$184.92)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	30.90	7	\$423.28	0%	0%	(\$184.92)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	30.90	7	\$423.28	0%	0%	(\$184.92)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	67,392.30	15	\$1,114.41	0%	0%	\$17.55	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,478.94	15	\$1,114.41	0%	0%	\$17.55	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,130.88	6	\$37.07	1%	3%	\$1.88	9.86	9.86	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.21	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.35	25	\$4.24	0%	0%	\$111.50	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	0.69	25	\$4.24	0%	0%	\$111.50	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.24	25	\$4.24	0%	0%	\$111.50	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.82	25	\$4.24	0%	0%	\$111.50	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.68	25	\$4.24	0%	0%	\$111.50	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.63	25	\$4.24	0%	0%	\$111.50	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.05	0%	0%	\$28.94	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$0.05	0%	0%	\$28.94	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.05	0%	0%	\$28.94	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.14	3	\$0.05	0%	0%	\$28.94	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.05	0%	0%	\$28.94	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.05	0%	0%	\$28.94	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.05	0%	0%	\$28.94	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.05	0%	0%	\$28.94	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	Existing	0.09	3	\$0.20	0%	0%	\$110.68	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	Existing	0.16	3	\$0.20	0%	0%	\$110.68	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	Existing	0.06	3	\$0.20	0%	0%	\$110.68	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	Existing	0.06	3	\$0.20	0%	0%	\$110.68	0.00	0.00	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.15	3	\$0.20	0%	0%	\$110.68	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.20	0%	0%	\$110.68	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$0.20	0%	0%	\$110.68	0.00	0.00	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.09	3	\$0.06	25%	90%	\$35.13	82.28	87.09	COM_RCX-HVAC-AEG-1
Lodging	Heating	Retrocommissioning	sqft	Existing	0.16	3	\$0.06	25%	90%	\$35.13	139.28	140.09	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.06	3	\$0.06	25%	90%	\$35.13	62.25	63.29	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.06	3	\$0.06	25%	90%	\$35.13	33.09	34.44	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.06	25%	90%	\$35.13	129.70	150.38	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.06	25%	90%	\$35.13	92.44	96.95	COM_RCX-Lighting-AEG-1

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Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.06	25%	90%	\$35.13	67.28	63.13	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$151.68	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.17	10	\$1.12	0%	0%	\$968.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.24	0%	0%	\$1,866.53	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.08	10	\$3.24	0%	0%	\$5,740.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$6,228.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	Existing	80.34	16	\$75.53	20%	75%	\$113.10	2.29	2.29	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,786.26	25	\$4,606.58	0%	75%	\$182.78	42.25	42.49	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,808.29	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.04	45	\$0.84	15%	50%	\$1,808.29	5.43	5.43	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,808.29	0.20	0.20	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.81	45%	50%	\$9,999.00	0.90	0.90	Building Energy Simulation Tool

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Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.81	45%	50%	\$9,999.00	-0.90	-0.90	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.41	-0.41	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$9,999.00	0.38	0.38	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.17	0.17	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.52	30	\$37.07	66%	66%	\$422.25	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	6.26	30	\$37.07	66%	66%	\$422.25	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.25	30	\$37.07	66%	66%	\$422.25	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,696.32	10	\$914.46	15%	75%	\$51.16	0.54	0.54	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	57.25	15	\$248.07	15%	75%	\$536.86	1.99	1.99	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	140.76	15	\$263.92	15%	75%	\$232.31	0.49	0.49	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	22.56	15	\$248.07	15%	75%	\$1,362.31	0.62	0.62	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	4,842.23	10	\$1,796.53	15%	75%	\$161.82	0.76	0.76	AEG-BEST

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Lodging	Cooling	HVAC - Economizer	HP cool	New	40.99	5	\$267.96	18%	75%	\$1,561.26	1.72	1.73	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.13	15	\$0.05	10%	15%	\$50.36	1.65	1.65	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.94	14	\$5.25	75%	75%	\$717.65	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.16	18	\$0.26	15%	20%	\$180.39	3.68	3.68	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	2,175.53	15	\$189.00	19%	25%	\$10.76	1.39	1.39	VENT_PMSM-Ventilation-AEG-2016-2
Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	783.96	15	\$1,273.23	19%	50%	\$201.14	2.75	2.75	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.11	15	\$0.01	19%	50%	\$12.15	9.67	9.67	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	3%	21%	\$2,946.57	0.53	0.53	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.40	15	\$0.76	1%	7%	\$124.60	5.58	5.59	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.35	15	\$0.76	1%	7%	\$124.60	6.46	6.46	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,371.05	15	\$7,501.21	15%	30%	\$140.72	4.68	4.69	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,241.21	15	\$7,501.21	15%	30%	\$140.72	15.53	15.54	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	New	8.34	3	\$33.20	15%	45%	\$1,425.36	0.09	0.09	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	New	149.90	15	\$410.87	15%	45%	\$341.87	8.55	8.57	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	79.47	15	\$698.92	15%	75%	\$1,097.01	10.43	10.44	RTU_PREC-Cooling-XCELCO-2017-18-1

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Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	109.15	20	\$1,419.90	15%	75%	\$479.62	25.37	25.37	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	215.93	20	\$1,419.90	15%	75%	\$479.62	66.18	66.18	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.20	5	\$0.75	30%	40%	\$245.09	2.46	2.46	STAT_WIFI-All-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.39	5	\$0.75	30%	40%	\$245.09	4.22	4.22	STAT_WIFI-All-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	30%	40%	\$245.09	1.92	1.92	STAT_WIFI-All-7PLN-v2-1
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	419.30	10	\$8.63	25%	65%	\$3.10	4.33	4.33	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	460.74	10	\$17.56	25%	65%	(\$34.81)	2.38	2.38	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	91.04	10	\$16.82	25%	65%	(\$58.46)	0.53	0.53	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$9.13	4.80	4.80	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,704.90	15	\$15.38	1%	75%	\$1.12	18.98	18.98	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	1,938.46	4	\$75.87	25%	40%	(\$29.92)	4.14	4.14	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	1.73	1.73	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,291.77	26.93	26.93	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.36	15	\$0.36	11%	23%	\$129.41	46.64	48.84	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.50	15	\$0.60	11%	23%	\$152.52	65.29	68.38	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	468.12	15	\$56.14	1%	3%	\$16.64	0.66	0.73	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.39	15	\$65.99	1%	3%	\$174.80	0.02	0.02	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	685.67	11	\$26.48	15%	30%	\$5.62	2.65	2.65	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	70.21	16	\$1,864.95	5%	15%	\$3,198.67	2.16	2.16	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	4.39	9	\$0.65	15%	25%	\$23.78	12.07	12.10	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	141.49	8	\$56.85	15%	25%	\$69.90	5.88	5.90	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	176.91	7	\$3,486.31	15%	30%	\$3,750.46	10.01	10.04	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	52.83	12	\$50.74	0%	0%	\$133.13	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	12.81	4	\$24.51	0%	0%	\$544.56	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	70.43	15	\$347.21	0%	0%	\$622.06	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	58.51	2	\$10.74	0%	0%	\$136.40	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.74	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	30.59	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	221.20	15	\$305.13	0%	0%	\$372.04	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	885.85	15	\$539.09	0%	0%	\$76.79	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	1,861.19	10	\$449.00	0%	0%	\$37.06	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	117.96	16	\$153.90	0%	0%	\$160.87	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	42.42	15	\$135.00	0%	0%	\$404.14	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	414.32	16	\$105.92	0%	0%	\$33.25	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	318.95	10	\$521.11	0%	0%	\$266.41	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	6.70	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	377.08	12	\$5,648.09	0%	0%	\$2,114.59	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	23.51	8	\$15.90	0%	0%	\$117.29	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.42	8	\$3.87	0%	0%	\$276.95	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	8.51	5	\$49.37	0%	0%	\$1,377.59	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,713.11	5	\$288.64	25%	75%	\$40.02	3.46	3.46	VEND_CTRL-Miscellaneous-SCE-17R0-41
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,170.65	18	\$8,815.42	25%	50%	\$464.40	9.88	9.87	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	70.30	15	\$335.00	15%	75%	\$200.19	15.75	15.75	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	137.05	15	\$335.00	15%	75%	\$200.19	38.02	38.02	AEG - BEST
Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	10.65	4	\$37.32	10%	50%	\$908.92	1.18	1.03	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$8.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$8.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$8.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$4.76	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,331.20	18	\$4,231.40	0%	0%	\$207.56	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	269.15	10	\$19.59	15%	75%	\$10.98	0.78	0.78	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	New	124.64	5	\$63,022.06	15%	75%	\$9,999.00	0.06	0.06	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.53	0%	0%	\$6,017.67	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	423.12	7	\$423.28	0%	0%	(\$183.71)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	29.55	7	\$423.28	0%	0%	(\$183.71)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	29.55	7	\$423.28	0%	0%	(\$183.71)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	64,982.28	15	\$1,114.41	0%	0%	\$17.42	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,368.62	15	\$1,114.41	0%	0%	\$17.42	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,130.88	6	\$37.07	1%	3%	\$1.88	1.36	1.36	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.18	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.35	25	\$4.24	10%	25%	\$106.98	14.46	14.47	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.69	25	\$4.24	10%	25%	\$106.98	24.77	24.77	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.24	25	\$4.24	10%	25%	\$106.98	11.25	11.25	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.84	25	\$4.24	10%	25%	\$106.98	19.86	19.86	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	1.67	25	\$4.24	10%	25%	\$106.98	264.74	274.73	ADVNC-AII-RSRCH-1

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Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.64	25	\$4.24	10%	25%	\$106.98	90.18	90.30	ADVNC-AII-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	New	0.05	3	\$0.07	0%	0%	\$35.15	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	New	0.11	3	\$0.07	0%	0%	\$35.15	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.07	0%	0%	\$35.15	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.13	3	\$0.07	0%	0%	\$35.15	0.00	0.00	COM_SEM-Water Heating-AEG-1
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.26	3	\$0.07	0%	0%	\$35.15	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.07	0%	0%	\$35.15	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.04	3	\$0.07	0%	0%	\$35.15	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.07	0%	0%	\$35.15	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	New	0.08	3	\$0.30	100%	100%	\$129.64	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	New	0.15	3	\$0.30	100%	100%	\$129.64	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	New	0.05	3	\$0.30	100%	100%	\$129.64	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	New	0.06	3	\$0.30	100%	100%	\$129.64	0.00	0.00	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	New	0.30	3	\$0.30	100%	100%	\$129.64	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	New	0.11	3	\$0.30	100%	100%	\$129.64	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	New	0.10	3	\$0.30	100%	100%	\$129.64	0.00	0.00	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	New	0.08	3	\$0.09	0%	0%	\$41.15	0.00	0.00	COM_RCX-HVAC-AEG-1

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Lodging	Heating	Retrocommissioning	sqft	New	0.15	3	\$0.09	0%	0%	\$41.15	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.09	0%	0%	\$41.15	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	New	0.06	3	\$0.09	0%	0%	\$41.15	0.00	0.00	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.30	3	\$0.09	0%	0%	\$41.15	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.09	0%	0%	\$41.15	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.10	3	\$0.09	0%	0%	\$41.15	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.21	10	\$0.09	0%	0%	\$71.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.30	10	\$1.12	0%	0%	\$541.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.08	3	\$0.24	0%	0%	\$1,043.22	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.15	10	\$3.24	0%	0%	\$3,208.15	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.03	10	\$0.70	0%	0%	\$3,481.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	New	80.34	16	\$75.53	20%	75%	\$113.10	0.35	0.35	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,929.99	25	\$4,507.67	0%	75%	\$165.34	13.24	13.24	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.13	45	\$0.84	15%	35%	\$115.13	73.75	75.58	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.56	45	\$0.84	15%	35%	\$115.13	285.14	285.56	Building Energy Simulation Tool

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Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$115.13	57.77	58.48	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.05	20	\$0.86	15%	35%	\$1,275.17	28.76	29.47	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	35%	\$1,275.17	12.06	12.08	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$1,275.17	2.44	2.47	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.18	20	\$0.81	45%	50%	\$9,999.00	24.58	25.19	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.37	20	\$0.81	45%	50%	\$9,999.00	-47.52	-47.59	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.81	45%	50%	\$9,999.00	-9.63	-9.75	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$1.70	15%	35%	\$40.37	1.13	1.16	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.91	45	\$1.70	15%	35%	\$40.37	380.19	380.75	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.14	45	\$1.70	15%	35%	\$40.37	77.02	77.97	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	8.36	18	\$0.59	15%	25%	\$1.92	4.64	4.75	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	26.15	18	\$0.59	15%	25%	\$1.92	13.39	13.41	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.91	18	\$0.59	15%	25%	\$1.92	2.71	2.75	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.50	30	\$37.07	48%	48%	\$109.92	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	30.71	30	\$37.07	48%	48%	\$109.92	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.61	30	\$37.07	48%	48%	\$109.92	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	89.99	5	\$267.96	18%	75%	\$725.37	197.24	203.26	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.18	15	\$0.05	5%	15%	\$36.67	53.29	55.36	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	9.40	14	\$5.25	3%	75%	\$71.73	1,132.09	1,134.74	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.05	18	\$0.26	15%	20%	\$609.12	36.69	37.14	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	378.31	15	\$189.00	13%	25%	\$62.96	47.29	48.21	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	136.33	15	\$1,273.23	13%	50%	\$1,177.00	53.57	54.60	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$0.02	13%	50%	\$71.10	188.25	191.88	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	9%	25%	\$9,949.57	7.48	7.62	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.19	15	\$0.76	3%	8%	\$73.20	173.90	174.31	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.11	15	\$0.76	3%	8%	\$73.20	91.49	93.26	HVAC_DOAS-Heating-7PLN-v5-1

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Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,942.29	15	\$7,501.21	15%	75%	\$52.82	301.97	313.69	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	15,753.85	15	\$7,501.21	15%	75%	\$52.82	2,261.41	2,266.69	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	13.43	13.88	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	Existing	249.56	15	\$410.87	15%	45%	\$209.19	355.85	362.53	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	132.30	15	\$698.92	15%	75%	\$671.27	364.50	369.67	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	221.70	20	\$1,958.49	15%	25%	\$205.96	6.89	7.25	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	834.85	20	\$1,958.49	15%	25%	\$205.96	336.76	336.76	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	30%	40%	\$119.46	78.44	80.38	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	30%	40%	\$119.46	303.27	303.72	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	30%	40%	\$119.46	61.44	62.20	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	70.27	10	\$8.63	25%	65%	\$19.96	28.22	30.44	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	77.21	10	\$17.56	25%	65%	(\$223.81)	15.51	16.73	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	15.26	10	\$16.82	25%	65%	(\$375.82)	3.02	3.23	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	617.44	11	\$37.97	15%	20%	\$9.64	18.07	18.82	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	285.65	15	\$15.38	16%	75%	\$7.19	69.82	74.63	AEG-BEST

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Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	324.85	4	\$75.87	25%	40%	(\$192.34)	48.28	51.61	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.70	2	\$5.13	15%	75%	\$27.78	37.96	40.58	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.63	20	\$258.33	1%	30%	\$2,419.56	120.87	129.20	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.28	15	\$0.36	3%	23%	\$166.57	1,138.44	1,175.53	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.40	15	\$0.60	3%	23%	\$196.32	1,593.82	1,645.74	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	599.77	15	\$56.14	1%	3%	\$12.37	29.31	31.50	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.70	15	\$65.99	1%	3%	\$165.49	1.66	1.78	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	457.37	11	\$26.48	15%	30%	\$8.88	105.15	111.13	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	46.83	16	\$1,864.95	5%	15%	\$5,051.70	71.78	75.86	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.22	9	\$0.65	15%	25%	\$90.11	311.15	330.59	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	103.60	8	\$56.85	15%	25%	\$100.35	165.38	175.71	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	129.54	7	\$3,486.31	15%	30%	\$5,384.39	310.19	329.56	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	140.57	12	\$50.74	0%	0%	\$52.26	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1

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Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	43.32	4	\$24.51	0%	0%	\$175.03	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	177.63	15	\$347.21	0%	0%	\$270.79	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	167.32	2	\$10.74	0%	0%	\$49.70	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	4.40	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	77.15	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	557.92	15	\$305.13	0%	0%	\$161.95	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	2,234.31	15	\$539.09	0%	0%	\$33.43	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,694.32	10	\$449.00	0%	0%	\$16.13	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	317.71	16	\$153.90	0%	0%	\$65.48	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	114.25	15	\$135.00	0%	0%	\$164.49	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,718.75	16	\$105.92	0%	0%	\$9.83	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,323.11	10	\$521.11	0%	0%	\$78.79	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	536.63	8	\$18,135.52	0%	0%	\$9,047.71	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1

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Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	951.06	12	\$605.15	0%	0%	\$98.63	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	62.74	8	\$15.90	0%	0%	\$45.99	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	6.46	8	\$3.87	0%	0%	\$108.60	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	22.73	5	\$49.37	0%	0%	\$540.09	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,665.25	5	\$288.64	25%	75%	\$43.16	52.71	54.19	VEND_CTRL-Miscellaneous-SCE-17R0-49
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	654.14	18	\$8,815.42	25%	50%	\$1,568.14	98.54	99.75	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	104.03	15	\$335.00	0%	0%	\$84.51	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	392.92	15	\$335.00	0%	0%	\$84.51	0.00	0.00	AEG - BEST
Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	8.02	4	\$37.32	10%	50%	\$1,158.52	136.32	113.12	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.32	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.32	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.32	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$4.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,405.04	18	\$4,231.40	0%	0%	\$350.43	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.73	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	70.91	7	\$423.28	0%	0%	(\$1,346.05)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$1,346.05)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$1,346.05)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	10,889.73	15	\$1,114.41	0%	0%	\$114.32	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$114.32	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	5,649.45	6	\$37.07	1%	3%	\$1.37	63.84	63.84	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.19	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$170.04	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	1.20	25	\$4.24	0%	0%	\$170.04	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.05	25	\$4.24	0%	0%	\$170.04	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.07	25	\$4.24	0%	0%	\$170.04	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.99	25	\$4.24	0%	0%	\$170.04	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.24	0%	0%	\$170.04	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.08	3	\$0.04	3%	11%	\$25.06	18.47	19.19	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.32	3	\$0.04	3%	11%	\$25.06	71.43	71.59	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.04	3%	11%	\$25.06	14.47	14.75	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.04	3%	11%	\$25.06	7.22	7.72	COM_SEM-Water Heating-AEG-1
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.04	3%	11%	\$25.06	106.35	113.44	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.04	3%	11%	\$25.06	24.56	26.09	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.04	3%	11%	\$25.06	11.68	8.24	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.04	3%	11%	\$25.06	17.85	14.81	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	Existing	0.11	3	\$0.26	0%	0%	\$129.60	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	Existing	0.45	3	\$0.26	0%	0%	\$129.60	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	Existing	0.02	3	\$0.26	0%	0%	\$129.60	0.00	0.00	COM_CX-HVAC-AEG-1

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Warehouse	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.26	0%	0%	\$129.60	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.26	0%	0%	\$129.60	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.26	0%	0%	\$129.60	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.26	0%	0%	\$129.60	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.11	3	\$0.08	9%	71%	\$41.14	198.23	205.93	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.45	3	\$0.08	9%	71%	\$41.14	766.47	768.26	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.02	3	\$0.08	9%	71%	\$41.14	155.28	158.28	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.08	9%	71%	\$41.14	25.84	27.62	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.08	9%	71%	\$41.14	950.99	1,014.39	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.08	9%	71%	\$41.14	219.58	233.30	COM_RCX-Lighting-AEG-1
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.08	9%	71%	\$41.14	208.89	147.37	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$198.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.12	0%	0%	\$3,383.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$6,523.68	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	Existing	140.90	16	\$75.53	20%	75%	\$64.49	19.23	19.23	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	8,838.00	25	\$14,612.03	0%	0%	\$182.78	0.00	0.00	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$250.50	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.32	45	\$0.84	15%	50%	\$250.50	92.26	92.26	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$250.50	0.44	0.44	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.05	20	\$0.86	15%	25%	\$1,424.23	4.40	4.41	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	25%	\$1,424.23	1.51	1.51	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$1,424.23	0.40	0.40	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.10	20	\$0.81	45%	50%	\$9,999.00	4.68	4.68	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.22	20	\$0.81	45%	50%	\$9,999.00	-8.79	-8.79	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$9,999.00	-2.30	-2.30	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$489.54	-0.33	-0.33	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.32	45	\$1.70	15%	50%	\$489.54	17.62	17.62	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$489.54	4.61	4.61	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	8.94	18	\$0.59	15%	25%	\$3.02	1.60	1.60	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	12.85	18	\$0.59	15%	25%	\$3.02	2.03	2.03	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.56	18	\$0.59	15%	25%	\$3.02	0.53	0.53	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.00	30	\$37.07	66%	66%	\$188.03	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	17.81	30	\$37.07	66%	66%	\$188.03	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.45	30	\$37.07	66%	66%	\$188.03	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	49.23	5	\$267.96	18%	75%	\$1,301.86	10.01	10.07	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.10	15	\$0.05	10%	15%	\$62.52	3.02	3.03	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.45	14	\$5.25	75%	75%	\$123.41	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.04	18	\$0.26	15%	20%	\$819.53	8.47	8.47	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	316.58	15	\$189.00	19%	25%	\$73.93	3.20	3.20	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	114.08	15	\$1,273.23	19%	50%	\$1,382.12	6.35	6.35	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$0.02	19%	50%	\$83.50	22.31	22.30	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	9%	25%	\$9,999.00	1.06	1.06	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.70	15	\$0.76	3%	8%	\$120.88	19.55	19.55	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.08	15	\$0.76	3%	8%	\$120.88	13.02	13.01	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,108.34	15	\$7,501.21	15%	75%	\$90.78	34.21	34.32	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,135.96	15	\$7,501.21	15%	75%	\$90.78	249.04	249.04	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	New	4.72	3	\$33.20	15%	45%	\$2,518.38	0.39	0.39	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	New	136.53	15	\$410.87	15%	45%	\$375.45	60.01	60.13	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	72.38	15	\$698.92	15%	75%	\$1,204.77	73.12	73.23	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	173.08	20	\$1,958.49	15%	25%	\$322.27	1.38	1.38	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	494.24	20	\$1,958.49	15%	25%	\$322.27	46.58	46.58	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.16	5	\$0.75	30%	40%	\$203.66	4.49	4.50	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.69	5	\$0.75	30%	40%	\$203.66	16.87	16.87	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	30%	40%	\$203.66	4.41	4.41	STAT_WIFI-AII-7PLN-v2-1

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Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	68.86	10	\$8.63	25%	65%	\$18.91	4.12	4.12	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	75.66	10	\$17.56	25%	65%	(\$211.99)	2.26	2.26	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	14.95	10	\$16.82	25%	65%	(\$355.97)	0.50	0.50	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$9.13	4.56	4.56	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	279.92	15	\$15.38	1%	75%	\$6.81	18.06	18.06	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	318.33	4	\$75.87	25%	40%	(\$182.18)	3.94	3.94	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	1.65	1.65	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,291.77	25.63	25.63	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.28	15	\$0.36	11%	23%	\$159.71	414.76	416.24	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.39	15	\$0.60	11%	23%	\$188.22	580.67	582.74	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	588.11	15	\$56.14	1%	3%	\$12.04	5.06	5.12	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.11	15	\$65.99	1%	3%	\$156.79	0.29	0.29	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	423.45	11	\$26.48	15%	30%	\$9.13	16.98	17.16	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	43.36	16	\$1,864.95	5%	15%	\$5,194.99	13.85	13.98	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.88	9	\$0.65	15%	25%	\$119.99	34.11	34.72	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	74.58	8	\$56.85	15%	25%	\$133.63	16.63	16.94	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	93.26	7	\$3,486.31	15%	30%	\$7,169.98	28.29	28.82	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	132.60	12	\$50.74	0%	0%	\$53.04	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	36.77	4	\$24.51	0%	0%	\$195.65	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	166.79	15	\$347.21	0%	0%	\$273.96	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	141.24	2	\$10.74	0%	0%	\$55.75	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	4.13	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	72.44	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	523.85	15	\$305.13	0%	0%	\$163.85	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	2,097.87	15	\$539.09	0%	0%	\$33.82	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	4,407.66	10	\$449.00	0%	0%	\$16.32	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	293.79	16	\$153.90	0%	0%	\$68.12	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	105.65	15	\$135.00	0%	0%	\$171.14	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,424.87	16	\$105.92	0%	0%	\$11.23	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,096.88	10	\$521.11	0%	0%	\$89.98	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	16.18	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	892.99	12	\$5,648.09	0%	0%	\$931.27	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	59.00	8	\$15.90	0%	0%	\$46.73	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	6.08	8	\$3.87	0%	0%	\$110.34	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	21.37	5	\$49.37	0%	0%	\$548.85	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,563.35	5	\$288.64	25%	75%	\$43.86	4.01	4.01	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	477.76	18	\$8,815.42	25%	50%	\$2,109.83	22.74	22.74	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	81.22	15	\$335.00	0%	0%	\$131.47	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	234.49	15	\$335.00	0%	0%	\$131.47	0.00	0.00	AEG - BEST

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Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	13.72	4	\$37.32	10%	50%	\$692.01	16.55	14.05	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.33	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.33	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.33	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$1.77	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,026.19	18	\$4,231.40	0%	0%	\$471.49	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.66	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	69.48	7	\$423.28	0%	0%	(\$1,274.96)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$1,274.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$1,274.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	10,671.30	15	\$1,114.41	0%	0%	\$108.28	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$108.28	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	5,649.45	6	\$37.07	1%	3%	\$1.37	9.72	9.72	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.17	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.28	25	\$4.24	10%	15%	\$165.20	8.73	8.74	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	New	1.21	25	\$4.24	10%	15%	\$165.20	32.83	32.83	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.05	25	\$4.24	10%	15%	\$165.20	8.59	8.59	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.07	25	\$4.24	10%	15%	\$165.20	6.25	6.25	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	1.00	25	\$4.24	10%	15%	\$165.20	635.76	638.54	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.17	25	\$4.24	10%	15%	\$165.20	80.12	80.75	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.04	3	\$0.03	3%	11%	\$20.62	0.64	0.64	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.03	3%	11%	\$20.62	2.39	2.39	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.03	3%	11%	\$20.62	0.62	0.62	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.03	3%	11%	\$20.62	0.45	0.45	COM_SEM-Water Heating-AEG-1

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Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.15	3	\$0.03	3%	11%	\$20.62	11.55	11.75	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.03	3%	11%	\$20.62	1.94	1.98	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.03	3%	11%	\$20.62	1.01	0.69	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.03	3%	11%	\$20.62	1.67	1.41	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	New	0.06	3	\$0.16	100%	100%	\$97.97	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	New	0.26	3	\$0.16	100%	100%	\$97.97	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.16	100%	100%	\$97.97	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.16	100%	100%	\$97.97	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	New	0.18	3	\$0.16	100%	100%	\$97.97	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.16	100%	100%	\$97.97	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.16	100%	100%	\$97.97	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	New	0.06	3	\$0.05	0%	0%	\$31.10	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	New	0.26	3	\$0.05	0%	0%	\$31.10	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.05	0%	0%	\$31.10	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.05	0%	0%	\$31.10	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.18	3	\$0.05	0%	0%	\$31.10	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.05	0%	0%	\$31.10	0.00	0.00	COM_RCX-Lighting-AEG-1

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Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.05	0%	0%	\$31.10	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$108.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.06	10	\$1.12	0%	0%	\$2,207.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.02	3	\$0.24	0%	0%	\$4,256.78	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	New	140.90	16	\$75.53	20%	75%	\$64.49	3.20	3.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	9,379.11	25	\$14,429.40	0%	0%	\$165.34	0.00	0.00	WHP Analysis
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.10	45	\$0.84	15%	35%	\$135.68	95.80	97.48	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.45	45	\$0.84	15%	35%	\$135.68	154.72	155.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$135.68	133.33	134.98	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.86	15%	50%	\$1,608.96	65.37	66.52	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	50%	\$1,608.96	11.45	11.47	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$1,608.96	9.87	9.99	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.13	20	\$0.81	45%	50%	\$9,999.00	31.93	32.49	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.30	20	\$0.81	45%	50%	\$9,999.00	-25.79	-25.84	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$9,999.00	-22.22	-22.50	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$1.70	15%	35%	\$46.45	1.47	1.49	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.14	45	\$1.70	15%	35%	\$46.45	206.29	206.70	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.38	45	\$1.70	15%	35%	\$46.45	177.78	179.97	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.26	18	\$0.59	15%	50%	\$2.27	21.08	21.45	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	21.01	18	\$0.59	15%	50%	\$2.27	25.43	25.48	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.55	18	\$0.59	15%	50%	\$2.27	21.92	22.19	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	2.62	30	\$37.07	48%	48%	\$131.91	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	24.67	30	\$37.07	48%	48%	\$131.91	0.00	0.00	WND_FLM-Heating-7PLN-v3-2

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Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.73	30	\$37.07	48%	48%	\$131.91	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	3,313.94	10	\$914.46	15%	75%	\$42.09	48.18	48.77	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	132.38	15	\$248.07	15%	75%	\$234.78	267.66	270.92	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	482.08	15	\$263.92	15%	75%	\$68.59	97.47	98.66	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	25.10	15	\$248.07	15%	75%	\$1,224.31	5.17	5.17	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	15,654.27	10	\$1,796.53	15%	75%	\$50.05	23.18	23.18	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	67.35	5	\$267.96	18%	75%	\$963.29	278.25	284.50	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.13	15	\$0.05	5%	15%	\$48.55	69.22	71.13	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.56	14	\$5.25	3%	75%	\$89.34	614.27	616.19	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.26	15%	20%	\$216.17	84.68	85.73	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,066.00	15	\$189.00	13%	25%	\$22.34	109.15	111.26	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	384.14	15	\$1,273.23	13%	50%	\$417.71	123.63	126.02	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.09	15	\$0.02	13%	50%	\$25.23	434.48	442.88	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	9%	25%	\$3,531.00	17.26	17.59	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.95	15	\$0.76	3%	8%	\$75.70	94.36	94.65	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.30	15	\$0.76	3%	8%	\$75.70	211.17	215.25	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,453.50	15	\$7,501.21	15%	15%	\$66.20	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,657.57	15	\$7,501.21	15%	15%	\$66.20	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	13.56	14.01	RTU_MNT-Cooling-PGE-R2-1
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	Existing	195.39	15	\$410.87	15%	45%	\$267.19	281.19	286.46	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	103.58	15	\$698.92	15%	75%	\$857.37	288.03	292.11	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	173.58	20	\$1,958.49	15%	25%	\$257.32	5.00	5.26	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	671.89	20	\$1,958.49	15%	25%	\$257.32	178.11	178.11	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.21	5	\$0.75	30%	40%	\$140.79	101.89	103.68	STAT_WIFI-All-7PLN-v2-1

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Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.95	5	\$0.75	30%	40%	\$140.79	164.55	164.88	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.12	5	\$0.75	30%	40%	\$140.79	141.81	143.56	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	111.71	10	\$8.63	25%	65%	\$12.55	44.87	48.39	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	122.75	10	\$17.56	25%	65%	(\$140.78)	24.65	26.59	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	24.26	10	\$16.82	25%	65%	(\$236.39)	4.81	5.14	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	617.44	11	\$37.97	15%	20%	\$9.64	28.73	29.92	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	454.13	15	\$15.38	16%	75%	\$4.52	110.99	118.64	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	516.45	4	\$75.87	25%	40%	(\$120.98)	76.75	82.04	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	99.70	2	\$5.13	15%	75%	\$27.78	60.35	64.50	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.63	20	\$258.33	1%	30%	\$2,419.56	192.14	205.38	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.28	15	\$0.36	13%	38%	\$166.57	1,212.65	1,252.16	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.40	15	\$0.60	13%	38%	\$196.32	1,697.71	1,753.02	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	599.77	15	\$56.14	1%	3%	\$12.37	24.01	25.80	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.70	15	\$65.99	1%	3%	\$165.49	1.36	1.46	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	457.37	11	\$26.48	15%	30%	\$8.88	86.13	91.03	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	46.83	16	\$1,864.95	5%	15%	\$5,051.70	58.80	62.14	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.39	9	\$0.65	15%	25%	\$45.90	254.87	270.79	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	103.60	8	\$56.85	15%	25%	\$100.35	135.46	143.93	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	129.54	7	\$3,486.31	15%	30%	\$5,384.39	254.08	269.95	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	926.36	12	\$50.74	0%	0%	\$7.59	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	3,834.64	4	\$24.51	0%	0%	\$1.90	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	3,896.52	15	\$347.21	0%	0%	\$11.21	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	2,127.49	2	\$10.74	0%	0%	\$2.53	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	96.42	15	\$508.61	0%	0%	\$1,029.79	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1,692.32	15	\$5,552.98	0%	0%	\$698.20	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	12,238.36	15	\$305.13	5%	25%	\$6.70	4,005.73	4,093.15	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	49,011.33	15	\$539.09	0%	0%	\$1.38	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	102,973.71	10	\$449.00	0%	0%	\$0.67	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	10,889.83	16	\$153.90	5%	25%	\$1.75	991.57	1,033.50	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	3,916.15	15	\$135.00	0%	0%	\$4.40	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	110,646.51	16	\$105.92	0%	0%	\$0.12	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	85,176.82	10	\$521.11	0%	0%	\$0.96	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	20,469.40	8	\$18,135.52	0%	0%	\$153.59	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	20,862.36	12	\$605.15	0%	0%	\$4.08	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	412.18	8	\$15.90	0%	0%	\$6.69	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6

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Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	42.47	8	\$3.87	0%	0%	\$15.79	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	149.27	5	\$49.37	0%	0%	\$78.56	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,081.56	5	\$288.64	25%	75%	\$63.39	1,294.42	1,294.42	VEND_CTRL-Miscellaneous-SCE-17R0-50
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,843.22	18	\$8,815.42	25%	50%	\$556.52	227.43	230.23	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	83.09	15	\$335.00	0%	0%	\$105.00	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	316.84	15	\$335.00	0%	0%	\$105.00	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.89	4	\$37.32	10%	50%	\$1,578.35	81.96	68.01	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.39	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.39	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.39	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$3.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,959.09	18	\$4,231.40	0%	0%	\$124.37	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.75	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	112.73	7	\$423.28	0%	0%	(\$846.67)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$846.67)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$846.67)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	17,312.79	15	\$1,114.41	0%	0%	\$71.91	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$71.91	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,168.62	6	\$37.07	1%	3%	\$1.86	38.58	38.58	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.14	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.22	25	\$4.24	0%	0%	\$182.44	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	0.96	25	\$4.24	0%	0%	\$182.44	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.15	25	\$4.24	0%	0%	\$182.44	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.11	25	\$4.24	0%	0%	\$182.44	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.99	25	\$4.24	0%	0%	\$182.44	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.24	0%	0%	\$182.44	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.06	3	\$0.18	3%	11%	\$51.55	24.00	24.66	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.26	3	\$0.18	3%	11%	\$51.55	38.76	38.88	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.18	3%	11%	\$51.55	33.40	34.04	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.18	3%	11%	\$51.55	11.48	12.28	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.18	3%	11%	\$51.55	87.11	92.92	COM_SEM-Lighting-AEG-1

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Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.18	3%	11%	\$51.55	20.11	21.37	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.72	3	\$0.18	3%	11%	\$51.55	880.86	810.42	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.18	3%	11%	\$51.55	10.73	8.91	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.08	3	\$0.20	0%	0%	\$29.84	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.36	3	\$0.20	0%	0%	\$29.84	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.20	0%	0%	\$29.84	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.20	0%	0%	\$29.84	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.20	0%	0%	\$29.84	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.20	0%	0%	\$29.84	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.66	3	\$0.20	0%	0%	\$29.84	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.08	3	\$0.06	0%	0%	\$9.47	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.36	3	\$0.06	0%	0%	\$9.47	0.00	0.00	COM_RCX-HVAC-AEG-1

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Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.06	0%	0%	\$9.47	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.06	0%	0%	\$9.47	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.06	0%	0%	\$9.47	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.06	0%	0%	\$9.47	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.66	3	\$0.06	0%	0%	\$9.47	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	25%	75%	\$198.52	439.74	469.05	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	5.14	10	\$1.12	22%	70%	\$31.16	38,114.19	35,066.22	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.33	3	\$0.24	15%	77%	\$60.07	12,458.11	11,461.84	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	2.50	10	\$3.24	12%	25%	\$184.74	4,954.84	4,558.61	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.50	10	\$0.70	2%	25%	\$200.47	1,753.25	1,613.05	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	Existing	196.52	16	\$75.53	20%	75%	\$46.24	21.97	21.97	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	5,840.19	25	\$9,655.70	0%	0%	\$182.78	0.00	0.00	WHP Analysis

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Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$315.04	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.26	45	\$0.84	15%	50%	\$315.04	49.50	49.50	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$315.04	1.01	1.01	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.04	20	\$0.86	15%	50%	\$1,768.02	20.44	20.46	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.86	15%	50%	\$1,768.02	2.84	2.84	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$1,768.02	3.19	3.19	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.81	45%	50%	\$9,999.00	6.20	6.21	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.17	20	\$0.81	45%	50%	\$9,999.00	-4.71	-4.71	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.81	45%	50%	\$9,999.00	-5.31	-5.31	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$556.35	-0.44	-0.44	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.26	45	\$1.70	15%	50%	\$556.35	9.45	9.45	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$556.35	10.64	10.64	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	6.92	18	\$0.59	15%	50%	\$3.60	7.41	7.42	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	10.20	18	\$0.59	15%	50%	\$3.60	3.81	3.81	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.58	18	\$0.59	15%	50%	\$3.60	4.29	4.29	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	1.55	30	\$37.07	66%	66%	\$224.75	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	14.13	30	\$37.07	66%	66%	\$224.75	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.26	30	\$37.07	66%	66%	\$224.75	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	2,074.81	10	\$914.46	15%	75%	\$66.48	4.68	4.68	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	82.88	15	\$248.07	15%	75%	\$370.84	32.29	32.29	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	301.82	15	\$263.92	15%	75%	\$108.34	11.76	11.76	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	11.58	15	\$248.07	15%	75%	\$2,653.29	0.45	0.45	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	9,984.33	10	\$1,796.53	15%	75%	\$78.48	2.25	2.25	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	39.12	5	\$267.96	18%	75%	\$1,633.28	14.90	14.94	AEG-BEST

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Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.08	15	\$0.05	10%	15%	\$80.57	4.01	4.01	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.33	14	\$5.25	75%	75%	\$155.51	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	18	\$0.26	15%	20%	\$290.84	19.54	19.54	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	892.05	15	\$189.00	19%	25%	\$26.24	7.38	7.37	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	321.45	15	\$1,273.23	19%	50%	\$490.50	14.65	14.65	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.07	15	\$0.02	19%	50%	\$29.63	51.49	51.48	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	9%	25%	\$4,750.73	2.46	2.45	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	3%	8%	\$121.37	10.49	10.49	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.22	15	\$0.76	3%	8%	\$121.37	30.04	30.04	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	858.13	15	\$7,501.21	15%	15%	\$114.67	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,249.88	15	\$7,501.21	15%	15%	\$114.67	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	4.72	3	\$33.20	15%	45%	\$2,518.38	0.39	0.39	RTU_MNT-Cooling-PGE-R2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	New	106.90	15	\$410.87	15%	45%	\$479.53	47.42	47.52	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	56.67	15	\$698.92	15%	75%	\$1,538.76	57.78	57.87	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	135.51	20	\$1,958.49	15%	25%	\$403.27	1.00	1.00	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	397.77	20	\$1,958.49	15%	25%	\$403.27	24.63	24.63	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.12	5	\$0.75	30%	40%	\$236.95	5.95	5.97	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.55	5	\$0.75	30%	40%	\$236.95	9.05	9.05	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.08	5	\$0.75	30%	40%	\$236.95	10.19	10.19	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	109.47	10	\$8.63	25%	65%	\$11.89	6.55	6.55	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	120.29	10	\$17.56	25%	65%	(\$133.34)	3.60	3.60	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	23.77	10	\$16.82	25%	65%	(\$223.90)	0.80	0.80	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	605.06	11	\$37.97	15%	20%	\$9.13	7.25	7.25	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	445.02	15	\$15.38	1%	75%	\$4.28	28.71	28.71	AEG-BEST

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Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	506.09	4	\$75.87	25%	40%	(\$114.59)	6.27	6.27	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	2.62	2.62	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,291.77	40.75	40.75	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.28	15	\$0.36	13%	38%	\$159.71	754.03	756.72	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.39	15	\$0.60	13%	38%	\$188.22	1,055.64	1,059.40	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	588.11	15	\$56.14	1%	3%	\$12.04	4.14	4.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.11	15	\$65.99	1%	3%	\$156.79	0.23	0.24	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	423.45	11	\$26.48	15%	30%	\$9.13	13.91	14.06	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	43.36	16	\$1,864.95	5%	15%	\$5,194.99	11.34	11.45	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.72	9	\$0.65	15%	25%	\$61.12	27.94	28.44	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	74.58	8	\$56.85	15%	25%	\$133.63	13.62	13.87	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	93.26	7	\$3,486.31	15%	30%	\$7,169.98	23.18	23.61	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	833.72	12	\$50.74	0%	0%	\$8.44	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	3,480.26	4	\$24.51	0%	0%	\$2.08	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	3,524.38	15	\$347.21	0%	0%	\$12.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	1,914.74	2	\$10.74	0%	0%	\$2.81	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	87.21	15	\$508.61	0%	0%	\$1,124.05	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1,530.70	15	\$5,552.98	0%	0%	\$762.12	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	11,069.51	15	\$305.13	5%	25%	\$7.32	698.85	700.91	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	44,330.42	15	\$539.09	0%	0%	\$1.51	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	93,139.02	10	\$449.00	0%	0%	\$0.73	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	9,862.98	16	\$153.90	5%	25%	\$1.91	177.80	181.74	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	3,546.88	15	\$135.00	0%	0%	\$4.80	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	100,075.03	16	\$105.92	0%	0%	\$0.13	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	77,038.79	10	\$521.11	0%	0%	\$1.06	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	657.95	8	\$215.90	0%	0%	\$56.88	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	18,869.86	12	\$5,648.09	0%	0%	\$41.59	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	370.96	8	\$15.90	0%	0%	\$7.43	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	38.22	8	\$3.87	0%	0%	\$17.55	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	134.35	5	\$49.37	0%	0%	\$87.29	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	973.41	5	\$288.64	25%	75%	\$70.44	102.71	102.71	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,346.21	18	\$8,815.42	25%	50%	\$748.76	52.48	52.48	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	64.87	15	\$335.00	0%	0%	\$163.93	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	188.34	15	\$335.00	0%	0%	\$163.93	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	10.07	4	\$37.32	10%	50%	\$942.79	9.95	8.45	SMARTSTRIP-Electronics-RTF-v3.2-1

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Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.66	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.66	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.66	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$1.40	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,891.56	18	\$4,231.40	0%	0%	\$167.33	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.05	0%	0%	\$4,463.11	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	110.47	7	\$423.28	0%	0%	(\$801.95)	0.00	0.00	CW-Water Heating-RTF-v5.1-12

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Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$801.95)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$801.95)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	16,965.53	15	\$1,114.41	0%	0%	\$68.11	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$68.11	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,168.62	6	\$37.07	1%	3%	\$1.86	5.88	5.88	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.12	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.22	25	\$4.24	10%	15%	\$176.43	11.59	11.60	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	0.96	25	\$4.24	10%	15%	\$176.43	17.61	17.61	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.15	25	\$4.24	10%	15%	\$176.43	19.83	19.83	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.11	25	\$4.24	10%	15%	\$176.43	9.94	9.94	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	1.00	25	\$4.24	10%	15%	\$176.43	520.75	523.03	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.17	25	\$4.24	10%	15%	\$176.43	65.63	66.14	ADVNC-AII-RSRCH-1

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Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.03	3	\$0.31	3%	11%	\$66.65	0.84	0.85	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.31	3%	11%	\$66.65	1.28	1.28	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.31	3%	11%	\$66.65	1.44	1.44	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.31	3%	11%	\$66.65	0.72	0.72	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.15	3	\$0.31	3%	11%	\$66.65	9.46	9.62	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.31	3%	11%	\$66.65	1.59	1.62	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	1.15	3	\$0.31	3%	11%	\$66.65	80.20	73.28	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.31	3%	11%	\$66.65	1.00	0.85	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.05	3	\$0.13	100%	100%	\$14.15	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.20	3	\$0.13	100%	100%	\$14.15	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.03	3	\$0.13	100%	100%	\$14.15	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.01	3	\$0.13	100%	100%	\$14.15	0.00	0.00	COM_CX-Water Heating-AEG-1

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.18	3	\$0.13	100%	100%	\$14.15	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.03	3	\$0.13	100%	100%	\$14.15	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	2.66	3	\$0.13	100%	100%	\$14.15	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.05	3	\$0.04	0%	0%	\$4.49	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.20	3	\$0.04	0%	0%	\$4.49	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.04	0%	0%	\$4.49	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.04	0%	0%	\$4.49	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.18	3	\$0.04	0%	0%	\$4.49	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.03	3	\$0.04	0%	0%	\$4.49	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	2.66	3	\$0.04	0%	0%	\$4.49	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	25%	75%	\$108.09	126.86	128.39	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	8.21	10	\$1.12	22%	70%	\$19.57	9,214.45	8,535.28	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	2.13	3	\$0.24	15%	77%	\$37.74	1,134.32	1,036.34	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	3.99	10	\$3.24	12%	25%	\$116.06	1,197.88	1,109.59	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.80	10	\$0.70	2%	25%	\$125.94	423.86	392.62	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	New	196.52	16	\$75.53	20%	75%	\$46.24	3.66	3.66	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	6,160.61	25	\$9,477.86	0%	0%	\$165.34	0.00	0.00	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	2.69	45	\$0.84	15%	35%	\$17.62	2.95	3.05	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.24	45	\$0.84	15%	35%	\$17.62	0.13	0.14	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	1.91	45	\$0.84	15%	35%	\$17.62	2.05	2.16	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	1.05	20	\$0.86	15%	35%	\$87.15	1.15	1.19	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.86	15%	35%	\$87.15	0.01	0.01	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.08	20	\$0.86	15%	35%	\$87.15	0.09	0.09	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	3.59	20	\$0.81	45%	50%	\$42.41	0.98	1.02	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.16	20	\$0.81	45%	50%	\$42.41	-0.02	-0.02	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-1.28	20	\$0.81	45%	50%	\$42.41	-0.34	-0.36	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$1.70	15%	35%	\$11.34	0.05	0.05	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.68	45	\$1.70	15%	35%	\$11.34	0.18	0.18	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	13.45	45	\$1.70	15%	35%	\$11.34	2.73	2.88	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	33.83	18	\$0.59	15%	50%	\$1.31	0.65	0.67	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	2.25	18	\$0.59	15%	50%	\$1.31	0.02	0.02	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	17.98	18	\$0.59	15%	50%	\$1.31	0.34	0.35	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	70.87	30	\$37.07	48%	48%	\$27.68	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	13.19	30	\$37.07	48%	48%	\$27.68	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	60.81	30	\$37.07	48%	48%	\$27.68	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	19,439.43	10	\$914.46	15%	75%	\$7.33	0.93	0.96	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	776.56	15	\$248.07	15%	75%	\$40.88	5.16	5.31	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	2,827.86	15	\$263.92	15%	75%	\$11.94	1.88	1.94	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	92,373.61	10	\$1,796.53	15%	75%	\$8.59	1.75	1.75	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	379.12	5	\$267.96	18%	75%	\$172.58	7.22	7.44	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	3.59	15	\$0.05	5%	15%	\$1.83	2.13	2.24	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.08	14	\$5.25	3%	75%	\$8,459.21	0.53	0.54	RES_HRV-Cooling-7PLN-v1-2

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Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	4.86	18	\$0.26	15%	20%	\$6.47	1.30	1.37	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	37,524.98	15	\$189.00	0%	0%	\$0.67	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	13,522.21	15	\$1,273.23	0%	0%	\$12.51	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	3.14	15	\$0.02	13%	50%	\$0.76	6.68	7.23	FAN_VSD-Ventilation-MIDATL-v3.0-13
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.29	15	\$0.23	9%	25%	\$105.75	0.27	0.29	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.51	15	\$0.76	3%	8%	\$56.46	0.08	0.08	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.25	15	\$0.76	3%	8%	\$56.46	0.38	0.42	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	39,297.83	15	\$7,501.21	15%	15%	\$20.99	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	6,766.45	15	\$7,501.21	15%	15%	\$20.99	0.00	0.00	HVLS-Heating-AEG-1
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	0.08	0.08	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	Existing	1,059.07	15	\$410.87	15%	45%	\$49.29	8.77	8.94	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	561.44	15	\$698.92	15%	75%	\$158.18	8.99	9.11	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	940.84	20	\$391.70	15%	25%	\$44.49	0.14	0.14	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	78.56	20	\$391.70	15%	25%	\$44.49	0.11	0.11	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	5.72	5	\$0.75	30%	40%	\$18.28	3.14	3.24	STAT_WIFI-All-7PLN-v2-1

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Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.51	5	\$0.75	30%	40%	\$18.28	0.14	0.14	STAT_WIFI-AII-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	4.07	5	\$0.75	30%	40%	\$18.28	2.18	2.29	STAT_WIFI-AII-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	185.04	10	\$8.63	25%	65%	\$7.24	0.03	0.03	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	203.33	10	\$17.56	25%	65%	(\$81.18)	0.01	0.01	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	40.18	10	\$16.82	25%	65%	(\$136.31)	0.00	0.00	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	633.03	11	\$37.97	15%	20%	\$8.98	0.02	0.02	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	752.24	15	\$15.38	16%	75%	\$2.61	0.06	0.06	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	855.47	4	\$75.87	25%	40%	(\$69.76)	0.04	0.04	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	102.22	2	\$5.13	15%	75%	\$25.88	0.03	0.04	DHW_STBK-Water Heating-ILTRM-v4.0-4
Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	12.95	20	\$258.33	1%	30%	\$2,254.21	0.11	0.11	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.95	15	\$0.36	3%	23%	\$49.72	1.48	1.54	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.33	15	\$0.60	3%	23%	\$58.60	2.08	2.16	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	2,122.84	15	\$56.14	1%	3%	\$3.56	0.04	0.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.61	15	\$65.99	1%	3%	\$168.83	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,347.79	11	\$26.48	15%	30%	\$0.64	0.57	0.60	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	650.00	16	\$1,864.95	5%	15%	\$364.40	0.39	0.41	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.70	9	\$0.65	15%	25%	\$41.65	0.36	0.39	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	98.10	8	\$56.85	15%	25%	\$108.47	0.19	0.21	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	122.67	7	\$3,486.31	15%	30%	\$5,819.87	0.36	0.39	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	29.79	12	\$50.74	0%	0%	\$246.06	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	9.06	4	\$24.51	0%	0%	\$843.45	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	32.08	15	\$347.21	0%	0%	\$1,455.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	36.76	2	\$10.74	0%	0%	\$228.53	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.79	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.93	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	100.77	15	\$305.13	0%	0%	\$870.34	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

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Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	403.54	15	\$539.09	0%	0%	\$179.63	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	847.84	10	\$449.00	0%	0%	\$86.69	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	68.55	16	\$153.90	0%	0%	\$316.01	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	24.65	15	\$135.00	0%	0%	\$793.89	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	256.99	16	\$105.92	0%	0%	\$55.75	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	197.84	10	\$521.11	0%	0%	\$446.76	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	117.90	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	171.77	12	\$605.15	0%	0%	\$530.02	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	13.29	8	\$15.90	0%	0%	\$216.58	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.37	8	\$3.87	0%	0%	\$511.41	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	4.82	5	\$49.37	0%	0%	\$2,543.43	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,735.39	5	\$288.64	25%	75%	\$41.25	0.00	0.00	VEND_CTRL-Miscellaneous-SCE-17R0-42

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	64,884.16	18	\$8,815.42	25%	50%	\$16.67	3.49	3.68	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	2,200.37	15	\$335.00	0%	0%	\$18.35	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	184.33	15	\$335.00	0%	0%	\$18.35	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	2,417.76	4	\$37.32	10%	50%	\$3.55	18.40	13.89	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	13.36	5	\$1.01	20%	75%	\$18.28	58.30	58.48	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.10	8	\$0.91	10%	35%	\$48.08	0.14	0.14	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.91	10%	35%	\$48.08	0.09	0.09	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	3.17	8	\$0.91	10%	35%	\$48.08	6.29	6.31	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	1.07	6	\$0.18	10%	15%	\$34.73	0.42	0.43	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	139,366.38	18	\$4,231.40	0%	0%	\$3.72	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.79	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	186.73	7	\$423.28	0%	0%	(\$488.23)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$488.23)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$488.23)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	28,677.52	15	\$1,114.41	0%	0%	\$41.47	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$41.47	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	240,579.66	6	\$37.07	1%	3%	\$0.03	1.06	1.06	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.83	20	\$8.09	0%	0%	\$1,095.42	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	5.86	25	\$4.24	0%	0%	\$31.52	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.50	25	\$4.24	0%	0%	\$31.52	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	4.57	25	\$4.24	0%	0%	\$31.52	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.24	0%	0%	\$31.52	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	3.74	25	\$4.24	0%	0%	\$31.52	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.51	25	\$4.24	0%	0%	\$31.52	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	Existing	1.55	3	\$4.99	0%	0%	\$257.38	0.00	0.00	COM_SEM-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Strategic Energy Management	sqft	Existing	0.14	3	\$4.99	0%	0%	\$257.38	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	1.11	3	\$4.99	0%	0%	\$257.38	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$4.99	0%	0%	\$257.38	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.31	3	\$4.99	0%	0%	\$257.38	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$4.99	0%	0%	\$257.38	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$4.99	0%	0%	\$257.38	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	3.17	3	\$4.99	0%	0%	\$257.38	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	Existing	2.15	3	\$10.11	0%	0%	\$879.76	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	Existing	0.19	3	\$10.11	0%	0%	\$879.76	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	Existing	1.53	3	\$10.11	0%	0%	\$879.76	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	Existing	0.01	3	\$10.11	0%	0%	\$879.76	0.00	0.00	COM_CX-Water Heating-AEG-1
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.36	3	\$10.11	0%	0%	\$879.76	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.07	3	\$10.11	0%	0%	\$879.76	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$10.11	0%	0%	\$879.76	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	Existing	2.15	3	\$3.21	2%	65%	\$279.27	8.06	8.47	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	Existing	0.19	3	\$3.21	2%	65%	\$279.27	0.36	0.37	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	Existing	1.53	3	\$3.21	2%	65%	\$279.27	5.60	6.06	COM_RCX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$3.21	2%	65%	\$279.27	0.02	0.02	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.36	3	\$3.21	2%	65%	\$279.27	1.30	1.41	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$3.21	2%	65%	\$279.27	0.26	0.28	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$3.21	2%	65%	\$279.27	0.01	0.01	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.25	10	\$0.09	0%	0%	\$57.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Miscellaneous	LED Signage	perBldg	Existing	106.71	16	\$75.53	20%	75%	\$85.15	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	328,513.08	25	\$543,136.96	0%	75%	\$182.78	9.07	9.13	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$522.24	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.13	45	\$0.84	15%	50%	\$522.24	0.04	0.04	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$0.84	15%	50%	\$522.24	0.02	0.02	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	1.00	20	\$0.86	15%	50%	\$88.33	0.65	0.65	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.86	15%	50%	\$88.33	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.07	20	\$0.86	15%	50%	\$88.33	0.05	0.05	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	2.12	20	\$0.81	45%	50%	\$74.82	0.20	0.20	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.09	20	\$0.81	45%	50%	\$74.82	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.84	20	\$0.81	45%	50%	\$74.82	-0.08	-0.08	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.11	45	\$1.70	15%	50%	\$126.45	-0.01	-0.01	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.13	45	\$1.70	15%	50%	\$126.45	0.01	0.01	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	1.27	45	\$1.70	15%	50%	\$126.45	0.16	0.16	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	37.39	18	\$0.59	15%	35%	\$1.39	0.14	0.14	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	1.06	18	\$0.59	15%	35%	\$1.39	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	10.06	18	\$0.59	15%	35%	\$1.39	0.04	0.04	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	41.82	30	\$37.07	66%	66%	\$42.67	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	7.31	30	\$37.07	66%	66%	\$42.67	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	40.15	30	\$37.07	66%	66%	\$42.67	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,856.02	10	\$914.46	15%	75%	\$11.51	0.09	0.09	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	473.62	15	\$248.07	15%	75%	\$64.19	0.63	0.63	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,724.70	15	\$263.92	15%	75%	\$18.75	0.23	0.23	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	57,404.76	10	\$1,796.53	15%	75%	\$13.30	0.17	0.17	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	214.77	5	\$267.96	18%	75%	\$296.66	0.38	0.38	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	New	2.12	15	\$0.05	10%	15%	\$2.98	0.13	0.13	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.04	14	\$5.25	75%	75%	\$9,999.00	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	3.20	18	\$0.26	15%	20%	\$9.16	0.30	0.30	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	28,323.31	15	\$189.00	0%	0%	\$0.83	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	10,206.36	15	\$1,273.23	0%	0%	\$15.45	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	2.07	15	\$0.02	19%	50%	\$0.93	0.78	0.78	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.19	15	\$0.23	9%	25%	\$149.63	0.04	0.04	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.29	15	\$0.76	3%	8%	\$112.17	0.01	0.01	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.55	15	\$0.76	3%	8%	\$112.17	0.04	0.04	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	23,189.62	15	\$7,501.21	15%	15%	\$34.56	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	3,752.46	15	\$7,501.21	15%	15%	\$34.56	0.00	0.00	HVLS-Heating-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Cooling	RTU - Maintenance	tonCool	New	4.72	3	\$33.20	15%	45%	\$2,518.38	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	New	579.41	15	\$410.87	15%	45%	\$88.47	1.48	1.48	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	307.16	15	\$698.92	15%	75%	\$283.89	1.80	1.81	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	745.18	20	\$391.70	15%	25%	\$54.33	0.03	0.03	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	46.51	20	\$391.70	15%	25%	\$54.33	0.02	0.02	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	3.38	5	\$0.75	30%	40%	\$28.18	0.19	0.19	STAT_WIFI-All-7PLN-v2-1
Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.28	5	\$0.75	30%	40%	\$28.18	0.01	0.01	STAT_WIFI-All-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	2.69	5	\$0.75	30%	40%	\$28.18	0.15	0.15	STAT_WIFI-All-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	176.87	10	\$8.63	25%	65%	\$7.36	0.00	0.00	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	194.35	10	\$17.56	25%	65%	(\$82.53)	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	38.40	10	\$16.82	25%	65%	(\$138.58)	0.00	0.00	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	605.06	11	\$37.97	15%	20%	\$9.13	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	719.00	15	\$15.38	1%	75%	\$2.65	0.01	0.01	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	817.67	4	\$75.87	25%	40%	(\$70.92)	0.00	0.00	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	New	97.70	2	\$5.13	15%	75%	\$26.32	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.38	20	\$258.33	1%	30%	\$2,291.77	0.02	0.02	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.04	15	\$0.36	11%	23%	\$43.48	0.59	0.60	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.45	15	\$0.60	11%	23%	\$51.24	0.83	0.84	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	2,231.61	15	\$56.14	1%	3%	\$3.23	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.36	15	\$65.99	1%	3%	\$159.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	5,877.02	11	\$26.48	15%	30%	\$0.66	0.09	0.09	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	601.80	16	\$1,864.95	5%	15%	\$374.82	0.07	0.08	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.96	9	\$0.65	15%	25%	\$54.86	0.04	0.04	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	71.31	8	\$56.85	15%	25%	\$142.87	0.02	0.02	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	89.17	7	\$3,486.31	15%	30%	\$7,665.64	0.03	0.03	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	28.22	12	\$50.74	0%	0%	\$249.25	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	7.85	4	\$24.51	0%	0%	\$921.86	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	29.44	15	\$347.21	0%	0%	\$1,514.99	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	30.77	2	\$10.74	0%	0%	\$258.32	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.73	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.78	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	92.46	15	\$305.13	0%	0%	\$906.08	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	370.27	15	\$539.09	0%	0%	\$187.01	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	777.93	10	\$449.00	0%	0%	\$90.25	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	62.52	16	\$153.90	0%	0%	\$334.65	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	22.48	15	\$135.00	0%	0%	\$840.72	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	218.00	16	\$105.92	0%	0%	\$62.38	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	167.82	10	\$521.11	0%	0%	\$499.90	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	3.52	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	157.61	12	\$5,648.09	0%	0%	\$5,149.98	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	12.56	8	\$15.90	0%	0%	\$219.59	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.29	8	\$3.87	0%	0%	\$518.52	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	4.55	5	\$49.37	0%	0%	\$2,579.19	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,640.50	5	\$288.64	25%	75%	\$41.79	0.00	0.00	VEND_CTRL-Miscellaneous-SCE-17R0-41
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	42,743.43	18	\$8,815.42	25%	50%	\$23.58	0.80	0.80	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	1,742.78	15	\$335.00	0%	0%	\$22.39	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	111.00	15	\$335.00	0%	0%	\$22.39	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	4,067.42	4	\$37.32	10%	50%	\$2.21	2.11	1.65	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	13.13	5	\$0.96	20%	75%	\$17.41	7.34	7.34	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.06	8	\$0.83	10%	35%	\$44.59	0.02	0.02	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.83	10%	35%	\$44.59	0.01	0.01	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	3.12	8	\$0.83	10%	35%	\$44.59	1.10	1.10	com-datacenters-7p_v5p.xlsx

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Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	1.05	6	\$0.13	10%	15%	\$24.92	0.06	0.06	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	91,809.72	18	\$4,231.40	0%	0%	\$5.27	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.08	0%	0%	\$4,463.11	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	178.48	7	\$423.28	0%	0%	(\$496.36)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$496.36)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$496.36)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	27,410.36	15	\$1,114.41	0%	0%	\$42.16	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$42.16	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	240,579.66	6	\$37.07	1%	3%	\$0.03	0.16	0.16	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.81	20	\$7.28	0%	0%	\$990.89	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	New	5.93	25	\$4.24	10%	15%	\$29.44	0.37	0.37	ADVNC-All-RRSCH-1

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Data Center	Heating	Advanced New Construction Designs	sqft	New	0.50	25	\$4.24	10%	15%	\$29.44	0.01	0.01	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	4.72	25	\$4.24	10%	15%	\$29.44	0.30	0.30	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.18	25	\$4.24	10%	15%	\$29.44	0.01	0.01	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	3.79	25	\$4.24	10%	15%	\$29.44	0.91	0.93	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.52	25	\$4.24	10%	15%	\$29.44	0.10	0.10	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	New	0.92	3	\$7.21	0%	0%	\$298.01	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Heating	Strategic Energy Management	sqft	New	0.08	3	\$7.21	0%	0%	\$298.01	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.73	3	\$7.21	0%	0%	\$298.01	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$7.21	0%	0%	\$298.01	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.59	3	\$7.21	0%	0%	\$298.01	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$7.21	0%	0%	\$298.01	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$7.21	0%	0%	\$298.01	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	New	5.33	3	\$7.21	0%	0%	\$298.01	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	New	1.27	3	\$5.26	100%	100%	\$594.79	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	New	0.11	3	\$5.26	100%	100%	\$594.79	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	New	1.01	3	\$5.26	100%	100%	\$594.79	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	New	0.01	3	\$5.26	100%	100%	\$594.79	0.00	0.00	COM_CX-Water Heating-AEG-1

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Data Center	Interior Lighting	Commissioning	sqft	New	0.68	3	\$5.26	100%	100%	\$594.79	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	New	0.09	3	\$5.26	100%	100%	\$594.79	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$5.26	100%	100%	\$594.79	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	New	1.27	3	\$1.67	0%	0%	\$188.81	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	New	0.11	3	\$1.67	0%	0%	\$188.81	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	New	1.01	3	\$1.67	0%	0%	\$188.81	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$1.67	0%	0%	\$188.81	0.00	0.00	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.68	3	\$1.67	0%	0%	\$188.81	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.09	3	\$1.67	0%	0%	\$188.81	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$1.67	0%	0%	\$188.81	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.47	10	\$0.09	0%	0%	\$29.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Miscellaneous	LED Signage	perBldg	New	106.71	16	\$75.53	20%	75%	\$85.15	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	345,710.51	25	\$531,862.32	0%	75%	\$165.34	3.14	3.14	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.08	45	\$0.84	15%	35%	\$186.88	124.23	127.82	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.33	45	\$0.84	15%	35%	\$186.88	228.48	230.64	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$186.88	58.57	59.20	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.17	20	\$0.86	15%	50%	\$589.97	114.22	117.52	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$589.97	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$589.97	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.18	20	\$0.81	45%	50%	\$9,999.00	70.62	72.66	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.22	20	\$0.81	45%	50%	\$9,999.00	-38.08	-38.44	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$9,999.00	-17.21	-17.40	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.04	45	\$1.70	15%	35%	\$98.88	-17.36	-17.86	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.47	45	\$1.70	15%	35%	\$98.88	304.63	307.52	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.24	45	\$1.70	15%	35%	\$98.88	137.71	139.18	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	1.58	18	\$0.59	15%	50%	\$9,999.00	24.66	25.37	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.89	18	\$0.59	15%	50%	\$9,999.00	-19.98	-20.17	Building Energy Simulation Tool

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Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.48	18	\$0.59	15%	50%	\$9,999.00	-9.03	-9.13	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.58	30	\$37.07	48%	48%	\$164.54	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	18.23	30	\$37.07	48%	48%	\$164.54	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.73	30	\$37.07	48%	48%	\$164.54	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	939.90	10	\$914.46	15%	75%	\$151.76	25.86	26.68	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	95.57	15	\$248.07	15%	75%	\$332.56	365.70	377.25	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	223.15	15	\$263.92	15%	75%	\$151.53	85.39	88.08	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	7,735.74	10	\$1,796.53	15%	75%	\$102.60	75.74	75.62	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	32.26	5	\$267.96	18%	75%	\$2,026.61	575.54	593.28	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.18	15	\$0.05	5%	15%	\$36.12	155.00	162.02	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.72	14	\$5.25	3%	75%	\$183.25	918.46	932.00	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.26	15%	20%	\$215.31	65.60	66.30	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	441.93	15	\$189.00	0%	0%	\$53.78	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	159.25	15	\$1,273.23	0%	0%	\$1,005.31	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.09	15	\$0.04	13%	25%	\$60.73	108.42	110.21	FAN_VSD-Ventilation-MIDATL-v3.0-13
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	21%	47%	\$3,516.94	22.20	22.57	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.70	15	\$0.76	7%	16%	\$95.09	231.34	234.75	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.30	15	\$0.76	7%	16%	\$95.09	271.58	276.08	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	1,984.58	15	\$7,501.21	15%	15%	\$83.46	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,353.56	15	\$7,501.21	15%	15%	\$83.46	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	8.63	3	\$33.20	15%	45%	\$1,403.19	87.23	90.13	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	Existing	91.45	15	\$410.87	15%	45%	\$570.87	834.90	850.64	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	48.48	15	\$698.92	15%	75%	\$1,831.84	850.48	862.61	RTU_PREC-Cooling-XCELCO-2017-18-1
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	79.58	20	\$685.47	15%	25%	\$301.36	20.11	22.12	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	178.04	20	\$685.47	15%	25%	\$301.36	155.49	155.49	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	30%	40%	\$164.57	225.33	231.85	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.70	5	\$0.75	30%	40%	\$164.57	243.00	245.30	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.12	5	\$0.75	30%	40%	\$164.57	109.85	111.02	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	56.52	10	\$8.63	25%	65%	\$24.15	96.81	101.52	DHW_AER-Water Heating-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	62.10	10	\$17.56	25%	65%	(\$270.77)	53.19	55.78	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	12.27	10	\$16.82	25%	65%	(\$454.67)	10.35	10.79	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	626.58	11	\$37.97	15%	20%	\$9.24	61.09	62.66	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	229.70	15	\$15.38	16%	75%	\$8.70	238.89	249.09	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	261.27	4	\$75.87	25%	40%	(\$232.69)	165.24	172.29	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	101.18	2	\$5.13	15%	75%	\$26.64	129.91	135.46	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kWh	Existing	12.82	20	\$258.33	1%	30%	\$2,319.54	413.73	431.39	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.43	15	\$0.36	3%	23%	\$109.24	1,088.15	1,128.68	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.60	15	\$0.60	3%	23%	\$128.75	1,523.42	1,580.16	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	156.51	15	\$56.14	1%	3%	\$48.88	31.28	34.54	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	52.63	15	\$65.99	1%	3%	\$170.88	1.24	1.37	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,378.77	11	\$26.48	15%	30%	\$1.71	349.47	369.30	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	243.58	16	\$1,864.95	5%	15%	\$971.21	238.57	252.11	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.46	9	\$0.65	15%	25%	\$46.39	311.51	342.22	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	100.72	8	\$56.85	15%	25%	\$107.15	165.57	181.89	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	125.93	7	\$3,486.31	15%	30%	\$5,749.23	310.54	341.16	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	24.37	12	\$50.74	0%	0%	\$300.22	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	11.98	4	\$24.51	0%	0%	\$794.01	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	27.90	15	\$347.21	0%	0%	\$1,730.12	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	32.14	2	\$10.74	0%	0%	\$260.22	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.69	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	12.12	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	87.63	15	\$305.13	0%	0%	\$1,034.75	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	350.93	15	\$539.09	0%	0%	\$213.57	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	737.30	10	\$449.00	0%	0%	\$103.07	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	60.78	16	\$153.90	0%	0%	\$393.91	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

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Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	21.86	15	\$135.00	0%	0%	\$989.59	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	341.68	16	\$105.92	0%	0%	\$52.12	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	263.03	10	\$521.11	0%	0%	\$417.67	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	103.08	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	149.38	12	\$605.15	0%	0%	\$630.14	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	10.87	8	\$15.90	0%	0%	\$264.27	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.12	8	\$3.87	0%	0%	\$624.02	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.94	5	\$49.37	0%	0%	\$3,103.55	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,462.37	5	\$288.64	25%	75%	\$49.27	125.38	129.58	VEND_CTRL-Miscellaneous-SCE-17R0-47
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,846.45	18	\$8,815.42	25%	50%	\$554.30	176.17	178.05	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	104.74	15	\$335.00	0%	0%	\$127.40	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	232.42	15	\$335.00	0%	0%	\$127.40	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.36	4	\$37.32	10%	50%	\$764.56	130.23	110.38	SMARTSTRIP-Electronics-RTF-v3.2-1

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Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$18.28	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.72	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.72	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.72	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$4.56	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	594.90	18	\$4,231.40	0%	5%	\$825.80	18.80	19.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	67.14	10	\$19.59	15%	75%	\$45.45	1.00	1.01	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	30.34	5	\$18,906.62	15%	75%	\$9,999.00	0.13	0.13	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.19	0%	0%	\$5,063.76	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	57.03	7	\$423.28	0%	0%	(\$1,594.92)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.59	7	\$423.28	0%	0%	(\$1,594.92)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.59	7	\$423.28	0%	0%	(\$1,594.92)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	8,758.49	15	\$1,114.41	0%	5%	\$137.86	153.87	160.44	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	28.41	15	\$1,114.41	0%	5%	\$137.86	0.09	0.10	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,108.98	6	\$37.07	1%	3%	\$6.99	52.52	52.52	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.22	0%	5%	\$1,095.42	6.97	7.05	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.38	25	\$4.24	0%	0%	\$136.17	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.24	0%	0%	\$136.17	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.24	0%	0%	\$136.17	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.36	25	\$4.24	0%	0%	\$136.17	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.58	25	\$4.24	0%	0%	\$136.17	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.24	0%	0%	\$136.17	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.08	3	\$0.04	5%	16%	\$27.40	73.89	77.23	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.04	5%	16%	\$27.40	79.68	80.85	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.04	5%	16%	\$27.40	36.02	36.62	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.06	3	\$0.04	5%	16%	\$27.40	33.99	35.45	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.04	5%	16%	\$27.40	155.72	169.93	COM_SEM-Lighting-AEG-1

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Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.04	5%	16%	\$27.40	33.80	37.13	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.04	5%	16%	\$27.40	14.13	11.13	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.04	5%	16%	\$27.40	23.45	19.88	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.11	3	\$0.23	0%	0%	\$126.09	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	Existing	0.26	3	\$0.23	0%	0%	\$126.09	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.23	0%	0%	\$126.09	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.03	3	\$0.23	0%	0%	\$126.09	0.00	0.00	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.18	3	\$0.23	0%	0%	\$126.09	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.23	0%	0%	\$126.09	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.23	0%	0%	\$126.09	0.00	0.00	COM_CX-Refrigeration-AEG-1
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.11	3	\$0.07	10%	65%	\$40.03	511.51	534.68	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.07	10%	65%	\$40.03	551.63	559.76	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.07	10%	65%	\$40.03	249.36	253.50	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.07	10%	65%	\$40.03	78.45	81.80	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.18	3	\$0.07	10%	65%	\$40.03	898.39	980.38	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.07	10%	65%	\$40.03	195.01	214.24	COM_RCX-Lighting-AEG-1

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Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.07	10%	65%	\$40.03	163.07	128.45	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$117.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.12	0%	0%	\$2,318.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.24	0%	0%	\$4,469.57	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	Existing	139.26	16	\$75.53	20%	75%	\$65.25	80.96	80.96	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,385.39	25	\$2,290.49	0%	0%	\$182.78	0.00	0.00	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$374.40	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.21	45	\$0.84	15%	50%	\$374.40	95.52	95.54	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$374.40	3.66	3.66	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.86	15%	50%	\$298.03	57.57	57.63	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.08	20	\$0.86	15%	50%	\$298.03	9.18	9.18	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	50%	\$298.03	5.60	5.60	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.05	20	\$0.81	45%	50%	\$9,999.00	7.24	7.25	Building Energy Simulation Tool

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Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$9,999.00	-3.74	-3.74	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$9,999.00	-2.28	-2.28	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$665.88	-0.31	-0.31	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.20	45	\$1.70	15%	50%	\$665.88	27.10	27.11	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$665.88	16.52	16.51	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	1.27	18	\$0.59	15%	50%	\$7.24	7.39	7.39	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	6.57	18	\$0.59	15%	50%	\$7.24	16.22	16.23	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.45	18	\$0.59	15%	50%	\$7.24	9.89	9.88	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	2.70	30	\$37.07	66%	66%	\$238.57	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	11.77	30	\$37.07	66%	66%	\$238.57	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.50	30	\$37.07	66%	66%	\$238.57	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	755.82	10	\$914.46	15%	75%	\$180.70	3.82	3.80	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	76.85	15	\$248.07	15%	75%	\$395.99	67.05	66.74	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	179.44	15	\$263.92	15%	75%	\$180.44	15.65	15.58	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	6,118.29	10	\$1,796.53	15%	75%	\$124.58	10.81	10.65	AEG-BEST

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Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	24.46	5	\$267.96	18%	75%	\$2,612.12	46.11	46.26	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.14	15	\$0.05	10%	15%	\$46.12	13.31	13.34	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.40	14	\$5.25	75%	75%	\$280.30	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.12	18	\$0.26	15%	20%	\$244.61	20.41	20.41	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	410.73	15	\$189.00	0%	0%	\$57.00	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	148.01	15	\$1,273.23	0%	0%	\$1,065.65	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.08	15	\$0.04	19%	25%	\$64.38	9.79	9.79	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	21%	47%	\$3,995.53	4.22	4.22	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.46	15	\$0.76	7%	16%	\$130.07	33.31	33.32	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.26	15	\$0.76	7%	16%	\$130.07	51.64	51.64	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,499.37	15	\$7,501.21	15%	15%	\$123.47	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	6,038.22	15	\$7,501.21	15%	15%	\$123.47	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	6.45	3	\$33.20	15%	45%	\$1,844.76	3.86	3.89	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	New	68.32	15	\$410.87	15%	45%	\$750.51	219.47	219.95	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	36.22	15	\$698.92	15%	75%	\$2,408.30	267.02	267.43	RTU_PREC-Cooling-XCELCO-2017-18-1

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Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	56.38	20	\$685.47	15%	25%	\$432.24	4.49	4.49	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	117.76	20	\$685.47	15%	25%	\$432.24	27.27	27.27	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.22	5	\$0.75	30%	40%	\$231.56	19.70	19.74	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.45	5	\$0.75	30%	40%	\$231.56	17.45	17.46	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.10	5	\$0.75	30%	40%	\$231.56	10.63	10.63	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	52.13	10	\$8.63	25%	65%	\$25.24	14.18	14.31	DHW_AER-Water Heating-ILTRM-v4.0-1
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	57.28	10	\$17.56	25%	65%	(\$283.01)	7.79	7.86	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	11.32	10	\$16.82	25%	65%	(\$475.23)	1.74	1.75	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	577.92	11	\$37.97	15%	20%	\$9.66	15.62	15.68	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	211.86	15	\$15.38	1%	75%	\$9.09	62.15	62.56	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	240.98	4	\$75.87	25%	40%	(\$243.21)	13.60	13.73	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	New	93.32	2	\$5.13	15%	75%	\$27.84	5.69	5.75	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kBtuh	New	11.82	20	\$258.33	1%	30%	\$2,424.42	88.23	88.81	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.44	15	\$0.36	11%	23%	\$103.35	456.19	460.83	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.61	15	\$0.60	11%	23%	\$121.81	638.67	645.17	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	149.28	15	\$56.14	1%	3%	\$48.99	5.91	6.11	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.03	15	\$65.99	1%	3%	\$162.13	0.23	0.24	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,202.36	11	\$26.48	15%	30%	\$1.76	63.86	64.51	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	225.52	16	\$1,864.95	5%	15%	\$998.72	52.03	52.52	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.83	9	\$0.65	15%	25%	\$59.77	40.07	41.85	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	74.91	8	\$56.85	15%	25%	\$138.06	19.54	20.44	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	93.66	7	\$3,486.31	15%	30%	\$7,407.70	33.25	34.81	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	23.15	12	\$50.74	0%	0%	\$303.75	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	10.27	4	\$24.51	0%	0%	\$870.70	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.11	15	\$347.21	0%	0%	\$1,841.46	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	26.39	2	\$10.74	0%	0%	\$302.44	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.62	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	10.90	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

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Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	78.85	15	\$305.13	0%	0%	\$1,101.34	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	315.79	15	\$539.09	0%	0%	\$227.31	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	663.48	10	\$449.00	0%	0%	\$109.70	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	52.90	16	\$153.90	0%	0%	\$433.42	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	19.02	15	\$135.00	0%	0%	\$1,088.84	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	288.92	16	\$105.92	0%	0%	\$58.30	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	222.42	10	\$521.11	0%	0%	\$467.16	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	3.02	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	134.42	12	\$5,648.09	0%	0%	\$6,259.77	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	10.30	8	\$15.90	0%	0%	\$267.60	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.06	8	\$3.87	0%	0%	\$631.88	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.73	5	\$49.37	0%	0%	\$3,143.10	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,365.95	5	\$288.64	25%	75%	\$50.19	11.72	11.72	VEND_CTRL-Miscellaneous-SCE-17R0-41
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,601.18	18	\$8,815.42	25%	50%	\$629.73	54.82	54.82	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	74.20	15	\$335.00	0%	0%	\$179.96	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	156.45	15	\$335.00	0%	0%	\$179.96	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	19.97	4	\$37.32	10%	50%	\$479.78	17.15	14.76	SMARTSTRIP-Electronics-RTF-v3.2-1
Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$17.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$6.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$6.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$6.01	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$2.72	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	515.88	18	\$4,231.40	0%	5%	\$938.18	5.85	5.85	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	64.63	10	\$19.59	15%	75%	\$45.72	0.25	0.25	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	New	29.93	5	\$18,906.62	15%	75%	\$9,999.00	0.01	0.01	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.18	0%	0%	\$4,965.17	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	52.60	7	\$423.28	0%	0%	(\$1,665.78)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.57	7	\$423.28	0%	0%	(\$1,665.78)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.57	7	\$423.28	0%	0%	(\$1,665.78)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	8,078.39	15	\$1,114.41	0%	5%	\$144.09	32.08	32.29	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	26.29	15	\$1,114.41	0%	5%	\$144.09	0.02	0.02	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,108.98	6	\$37.07	1%	3%	\$6.99	9.13	9.13	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.20	0%	5%	\$990.89	1.53	1.53	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.38	25	\$4.24	10%	15%	\$131.18	37.93	37.96	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	0.80	25	\$4.24	10%	15%	\$131.18	33.59	33.60	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.18	25	\$4.24	10%	15%	\$131.18	20.47	20.47	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.35	25	\$4.24	10%	15%	\$131.18	21.19	21.24	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	1.59	25	\$4.24	10%	15%	\$131.18	688.36	696.60	ADVNC-AII-RSRCH-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	15%	\$131.18	87.12	88.70	ADVNC-All-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.06	3	\$0.05	16%	16%	\$27.66	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.05	16%	16%	\$27.66	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.05	16%	16%	\$27.66	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$0.05	16%	16%	\$27.66	0.00	0.00	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.25	3	\$0.05	16%	16%	\$27.66	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.05	16%	16%	\$27.66	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.05	16%	16%	\$27.66	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.05	16%	16%	\$27.66	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	New	0.08	3	\$0.22	100%	100%	\$119.31	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	New	0.17	3	\$0.22	100%	100%	\$119.31	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	New	0.04	3	\$0.22	100%	100%	\$119.31	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	New	0.02	3	\$0.22	100%	100%	\$119.31	0.00	0.00	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.28	3	\$0.22	100%	100%	\$119.31	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.22	100%	100%	\$119.31	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.22	100%	100%	\$119.31	0.00	0.00	COM_CX-Refrigeration-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.08	3	\$0.07	0%	0%	\$37.87	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.17	3	\$0.07	0%	0%	\$37.87	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.07	0%	0%	\$37.87	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.07	0%	0%	\$37.87	0.00	0.00	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.28	3	\$0.07	0%	0%	\$37.87	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.07	0%	0%	\$37.87	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.07	0%	0%	\$37.87	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.20	10	\$0.09	0%	0%	\$70.10	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.09	10	\$1.12	0%	0%	\$1,614.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.02	3	\$0.24	0%	0%	\$3,112.49	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.05	10	\$3.24	0%	0%	\$9,571.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	New	139.26	16	\$75.53	20%	75%	\$65.25	15.23	15.23	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,468.68	25	\$2,259.50	0%	0%	\$165.34	0.00	0.00	WHP Analysis

Wyoming Commercial Measures Assumptions

Table I-10 Summary of Commercial Measure Assumptions in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	42.31	20	\$18.63	14%	100%	\$43.89	428.16	410.45	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	55.37	25	\$20.82	8%	100%	\$33.49	338.53	325.17	AEG BEST
Large Office	Cooling	RTU	1 kBTU/hr	Existing	15.55	15	\$1.02	44%	100%	\$7.40	524.95	498.90	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	Existing	249.85	15	\$210.81	2%	100%	\$95.58	35.04	33.52	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	Existing	249.85	15	\$200.86	1%	100%	\$61.87	11.11	10.63	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	4.77	15	\$2.34	14%	100%	\$56.32	67.84	60.37	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	20.44	25	\$22.89	8%	100%	\$90.77	57.55	55.86	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	Existing	117.90	15	\$200.86	1%	100%	\$61.87	5.24	5.02	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.76	15	\$2.34	14%	100%	\$56.32	18.48	17.16	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.13	25	\$22.89	8%	100%	\$90.77	11.63	11.29	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	Existing	28,319.83	20	\$1,330.55	100%	100%	\$4.24	809.73	785.87	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	45%	100%	(\$437.10)	26.54	25.23	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	Existing	61.97	8	\$1.09	100%	100%	(\$56.18)	99.41	100.90	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	Existing	69.17	8	\$4.71	100%	100%	(\$18.79)	61.59	54.10	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	Existing	23.53	17	\$28.54	100%	100%	\$29.07	2,065.23	1,926.37	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Interior Lighting	High-Bay Lighting	lamps	Existing	321.80	15	\$6.29	100%	100%	(\$95.51)	952.15	845.43	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	Existing	145.03	8	\$1.06	100%	100%	(\$28.58)	22.43	27.10	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	Existing	75.44	17	\$64.65	100%	100%	\$24.04	198.04	182.69	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Area Lighting	lamps	Existing	1,024.99	15	\$157.49	100%	100%	(\$26.19)	1,313.09	1,184.82	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	14%	100%	\$279.89	2.71	2.60	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	45%	100%	\$27.96	3.06	2.90	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	45%	100%	\$75.02	1.77	1.70	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	66%	100%	(\$10.69)	42.82	40.70	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	76%	100%	\$52.79	28.40	27.20	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	43%	100%	(\$15.78)	16.67	15.87	DW-Food Preparation-XCELCO-2017-18-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	43%	100%	\$69.57	12.28	11.90	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	43%	100%	(\$33.55)	88.37	85.48	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	178.02	165.26	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	10.56	9.91	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	23.65	21.92	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	16.47	15.48	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	40%	10%	\$0.02	0.84	0.79	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	36.05	20	\$18.63	14%	100%	\$51.51	260.37	250.85	AEG BEST
Large Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	45.21	25	\$20.82	8%	100%	\$41.02	220.71	212.30	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Cooling	RTU	1 kBTU/hr	New	10.29	15	\$1.02	44%	100%	\$11.18	252.74	242.73	AEG BEST
Large Office	Cooling	PTAC	12 kBTU/hr	New	223.62	15	\$210.81	2%	100%	\$90.22	46.66	40.48	PTAC-Cooling-AEG-v2-1
Large Office	Cooling	PTHP	12 kBTU/hr	New	223.62	15	\$200.86	1%	100%	\$53.07	19.11	18.09	PTHP-Cooling-AEG-v2-1
Large Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	4.05	15	\$2.34	14%	100%	\$49.26	26.48	25.68	AEG BEST
Large Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	20.44	25	\$22.89	8%	100%	\$90.77	47.15	45.80	AEG BEST
Large Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	24%	100%	\$0.00	0.00	0.00	Default
Large Office	Heating	PTHP	12 kBTU/hr	New	116.46	15	\$200.86	1%	100%	\$53.07	9.32	8.83	PTHP-Heating-AEG-v2-1
Large Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.33	15	\$2.34	14%	100%	\$49.26	8.69	8.43	AEG BEST
Large Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.13	25	\$22.89	8%	100%	\$90.77	9.53	9.25	AEG BEST
Large Office	Ventilation	Ventilation	1000 CFM	New	25,605.98	20	\$1,330.55	100%	100%	\$4.69	819.48	795.13	AEG-BEST
Large Office	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	45%	100%	(\$437.10)	17.64	16.99	AEG-BEST
Large Office	Interior Lighting	General Service Lighting	lamps	New	61.97	8	\$1.09	100%	100%	(\$56.18)	39.08	35.09	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Exempted Lighting	lamps	New	69.17	8	\$4.71	100%	100%	(\$18.79)	21.14	18.88	USDOE SSL Projections - 2016
Large Office	Interior Lighting	Linear Lighting	lamps	New	23.53	17	\$28.54	100%	100%	\$29.07	1,326.78	1,260.19	USDOE SSL Projections - 2016
Large Office	Interior Lighting	High-Bay Lighting	lamps	New	321.80	15	\$6.29	100%	100%	(\$95.51)	641.56	585.41	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	General Service Lighting	lamps	New	145.03	8	\$1.06	100%	100%	(\$28.58)	8.39	8.27	USDOE SSL Projections - 2016
Large Office	Exterior Lighting	Linear Lighting	lamps	New	75.44	17	\$64.65	100%	100%	\$24.04	125.71	118.31	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Area Lighting	lamps	New	1,024.99	15	\$157.49	100%	100%	(\$26.19)	938.19	869.57	USDOE SSL Projections - 2016
Large Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	14%	100%	\$279.89	1.74	1.69	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	77%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	45%	100%	\$27.96	1.80	1.73	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	45%	100%	\$75.02	1.15	1.12	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Office	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	66%	100%	(\$10.69)	27.31	26.33	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	76%	100%	\$52.79	18.02	17.44	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Office	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	43%	100%	(\$15.78)	10.32	9.95	DW-Food Preparation-XCELCO-2017-18-1
Large Office	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	43%	100%	\$69.57	9.39	9.12	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Office	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	43%	100%	(\$33.62)	65.46	63.27	COOK_STM-Food Preparation-RTF-v2.4-2
Large Office	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	83.02	78.60	CEL_PCDT-Office Equipment-7PTN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	4.80	4.56	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	9.07	8.53	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	7.31	6.95	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Office	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	40%	10%	\$0.02	0.42	0.40	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Large Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	Existing	16.61	15	\$1.02	66%	100%	\$6.92	3,172.56	3,015.11	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$109.27	298.41	291.25	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	21.84	25	\$22.89	8%	100%	\$84.09	232.05	225.22	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$109.27	41.98	40.97	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.68	25	\$22.89	8%	100%	\$84.09	49.76	48.29	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	Existing	16,408.23	20	\$1,330.55	100%	100%	\$7.32	2,486.49	2,413.23	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	60%	100%	(\$437.10)	119.24	113.35	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	Existing	58.32	8	\$1.09	100%	100%	(\$59.00)	361.17	366.51	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	Existing	84.38	8	\$4.71	100%	100%	(\$15.40)	315.74	277.33	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	Existing	66.80	17	\$64.65	100%	100%	\$27.09	8,075.01	7,456.20	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	Existing	463.79	15	\$6.29	100%	100%	(\$66.78)	5,339.58	4,755.90	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	Existing	110.99	8	\$1.06	100%	100%	(\$29.88)	241.89	234.87	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	Existing	96.37	17	\$64.65	100%	100%	\$18.78	332.24	306.78	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	Existing	917.79	15	\$157.49	100%	100%	(\$29.24)	6,441.72	5,814.44	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	9%	100%	\$279.89	30.18	28.98	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	5%	100%	\$27.96	6.17	5.86	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	5%	100%	\$75.02	1.79	1.72	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	4%	100%	(\$10.69)	18.80	17.87	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	4%	100%	\$52.79	10.77	10.31	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	4%	100%	(\$15.78)	11.22	10.68	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	4%	100%	\$69.57	8.26	8.01	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	4%	100%	(\$33.55)	59.46	57.51	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	359.06	333.33	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	21.30	19.98	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	47.71	44.21	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	99.67	93.66	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	20%	10%	\$0.02	5.24	4.92	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Office	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Office	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	RTU	1 kBTU/hr	New	10.37	15	\$1.02	66%	100%	\$11.09	1,441.46	1,384.39	AEG BEST
Small Office	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$122.75	108.77	106.10	PTAC-Cooling-AEG-v2-1
Small Office	Cooling	PTHP	12 kBTU/hr	New	382.30	15	\$401.71	1%	100%	\$77.46	49.54	47.58	PTHP-Cooling-AEG-v2-1
Small Office	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Office	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Cooling	Geothermal Heat Pump	1 kbtu/h	New	21.84	25	\$22.89	8%	100%	\$84.09	190.10	184.65	AEG BEST
Small Office	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Small Office	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Heating	PTHP	12 kBTU/hr	New	205.17	15	\$401.71	1%	100%	\$77.46	26.59	25.54	PTHP-Heating-AEG-v2-1
Small Office	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Office	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.68	25	\$22.89	8%	100%	\$84.09	40.76	39.59	AEG BEST
Small Office	Ventilation	Ventilation	1000 CFM	New	14,746.63	20	\$1,330.55	100%	100%	\$8.14	2,231.70	2,165.37	AEG-BEST
Small Office	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	60%	100%	(\$437.10)	79.26	76.32	AEG-BEST
Small Office	Interior Lighting	General Service Lighting	lamps	New	58.32	8	\$1.09	100%	100%	(\$59.00)	139.13	124.74	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Exempted Lighting	lamps	New	84.38	8	\$4.71	100%	100%	(\$15.40)	109.84	98.12	USDOE SSL Projections - 2016
Small Office	Interior Lighting	Linear Lighting	lamps	New	66.80	17	\$64.65	100%	100%	\$27.09	5,115.63	4,817.63	USDOE SSL Projections - 2016
Small Office	Interior Lighting	High-Bay Lighting	lamps	New	463.79	15	\$6.29	100%	100%	(\$66.78)	3,527.41	3,220.23	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	General Service Lighting	lamps	New	110.99	8	\$1.06	100%	100%	(\$29.88)	103.87	91.51	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Linear Lighting	lamps	New	96.37	17	\$64.65	100%	100%	\$18.78	210.48	198.22	USDOE SSL Projections - 2016
Small Office	Exterior Lighting	Area Lighting	lamps	New	917.79	15	\$157.49	100%	100%	(\$29.24)	4,662.62	4,326.71	USDOE SSL Projections - 2016
Small Office	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Office	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	9%	100%	\$279.89	19.41	18.81	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	5%	100%	\$27.96	3.63	3.49	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	5%	100%	\$75.02	1.16	1.13	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Office	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	4%	100%	(\$10.69)	11.99	11.56	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	4%	100%	\$52.79	6.83	6.61	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Office	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	4%	100%	(\$15.78)	6.95	6.70	DW-Food Preparation-XCELCO-2017-18-1
Small Office	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	4%	100%	\$69.57	6.32	6.14	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Office	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	4%	100%	(\$33.62)	44.04	42.57	COOK_STM-Food Preparation-RTF-v2.4-2
Small Office	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	167.44	158.53	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	9.68	9.19	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	18.29	17.21	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	44.21	42.05	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Office	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	20%	10%	\$0.02	2.57	2.45	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Office	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Office	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Office	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Office	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Office	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Office	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	27.18	20	\$2.19	1%	100%	\$63.47	52.80	50.64	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	36.60	25	\$20.82	1%	100%	\$50.67	41.46	39.83	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	Existing	10.91	15	\$1.02	79%	100%	\$10.54	1,477.37	1,404.66	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	Existing	28,411.41	20	\$1,330.55	100%	100%	\$4.23	2,548.15	2,473.62	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Water Heating	Water Heater	1 kBtu/hr	Existing	1.24	13	\$1.69	61%	100%	(\$437.10)	58.13	55.30	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	Existing	151.54	8	\$1.09	100%	100%	(\$30.57)	257.28	328.79	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	Existing	358.69	8	\$4.71	100%	100%	(\$3.62)	624.43	547.83	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Linear Lighting	lamps	Existing	135.47	17	\$64.65	100%	100%	\$13.35	6,323.04	5,839.23	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	798.13	15	\$6.29	100%	100%	(\$38.61)	3,324.07	2,957.99	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	Existing	152.51	8	\$1.06	100%	100%	(\$26.13)	117.32	130.19	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	Existing	110.95	17	\$64.65	100%	100%	\$16.30	146.66	135.45	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	Existing	940.06	15	\$157.49	100%	100%	(\$28.55)	1,201.42	1,084.43	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	14%	100%	\$279.89	10.43	10.02	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	52%	100%	\$27.96	27.35	25.95	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	52%	100%	\$75.02	7.98	7.67	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	49%	100%	(\$10.69)	90.83	86.39	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	45%	100%	\$52.79	48.19	46.16	COOK_FRY-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	40%	100%	(\$15.78)	43.77	41.68	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	40%	100%	\$69.57	32.27	31.27	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	40%	100%	(\$33.55)	232.01	224.46	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	36.80	34.17	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	2.20	2.06	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	4.88	4.52	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	82%	10%	\$0.04	4.53	4.26	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	0.77	0.72	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Large Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	22.96	20	\$2.19	1%	100%	\$61.60	28.69	27.66	AEG BEST
Large Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	29.11	25	\$20.82	1%	100%	\$63.72	23.94	23.04	AEG BEST
Large Retail	Cooling	RTU	1 kBTU/hr	New	9.04	15	\$1.02	79%	100%	\$12.73	807.23	775.49	AEG BEST
Large Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Large Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$123.15	10.97	10.73	PTHP-Cooling-AEG-v2-1
Large Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	4%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Large Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	39%	100%	\$0.00	0.00	0.00	Default
Large Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$123.15	4.86	4.75	PTHP-Heating-AEG-v2-1
Large Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	4%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Large Retail	Ventilation	Ventilation	1000 CFM	New	24,460.46	20	\$1,330.55	100%	100%	\$4.91	1,993.93	1,934.92	AEG-BEST
Large Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	61%	100%	(\$437.10)	34.76	33.47	AEG-BEST
Large Retail	Interior Lighting	General Service Lighting	lamps	New	151.54	8	\$1.09	100%	100%	(\$30.57)	96.41	99.28	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	Exempted Lighting	lamps	New	358.69	8	\$4.71	100%	100%	(\$3.62)	220.76	198.53	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Interior Lighting	Linear Lighting	lamps	New	135.47	17	\$64.65	100%	100%	\$13.35	3,636.62	3,425.55	USDOE SSL Projections - 2016
Large Retail	Interior Lighting	High-Bay Lighting	lamps	New	798.13	15	\$6.29	100%	100%	(\$38.61)	2,148.24	1,972.46	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	General Service Lighting	lamps	New	152.51	8	\$1.06	100%	100%	(\$26.13)	42.40	39.80	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Linear Lighting	lamps	New	110.95	17	\$64.65	100%	100%	\$16.30	84.32	79.43	USDOE SSL Projections - 2016
Large Retail	Exterior Lighting	Area Lighting	lamps	New	940.06	15	\$157.49	100%	100%	(\$28.55)	729.87	673.42	USDOE SSL Projections - 2016
Large Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Large Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	14%	100%	\$279.89	6.04	5.85	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	82%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	52%	100%	\$27.96	14.54	14.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	52%	100%	\$75.02	4.65	4.51	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Large Retail	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	49%	100%	(\$10.69)	52.18	50.31	COOK_OVN-Food Preparation-RTF-v2.3-1
Large Retail	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	45%	100%	\$52.79	27.50	26.62	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	40%	100%	(\$15.78)	24.46	23.59	DW-Food Preparation-XCELCO-2017-18-1
Large Retail	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	40%	100%	\$69.57	22.35	21.72	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Large Retail	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	40%	100%	(\$33.62)	155.60	150.41	COOK_STM-Food Preparation-RTF-v2.4-2
Large Retail	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	15.63	14.80	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.90	0.86	CEL_PCLT-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	1.70	1.60	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	82%	10%	\$0.04	1.80	1.71	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Large Retail	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	0.36	0.34	CEL_PCDT-Office Equipment-7PLN-v3-1
Large Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	40%	100%	\$0.00	0.00	0.00	Standard
Large Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Large Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Large Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	7%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Large Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Large Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	Existing	11.97	15	\$1.02	67%	100%	\$9.61	1,814.82	1,725.51	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Small Retail	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	15.71	25	\$22.89	8%	100%	\$119.17	132.98	129.09	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	3.01	25	\$22.89	8%	100%	\$119.17	25.48	24.73	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	Existing	9,642.91	20	\$1,330.55	100%	100%	\$12.45	1,140.80	1,107.43	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	62%	100%	(\$437.10)	68.84	65.49	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	Existing	100.01	8	\$1.09	100%	100%	(\$46.32)	223.99	286.24	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	Existing	236.74	8	\$4.71	100%	100%	(\$5.49)	543.62	476.93	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	Existing	89.41	17	\$64.65	100%	100%	\$20.23	5,504.77	5,083.56	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	Existing	526.76	15	\$6.29	100%	100%	(\$58.50)	2,893.90	2,575.19	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	Existing	152.51	8	\$1.06	100%	100%	(\$26.13)	154.75	171.73	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Exterior Lighting	Linear Lighting	lamps	Existing	110.95	17	\$64.65	100%	100%	\$16.30	193.45	178.67	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	Existing	940.06	15	\$157.49	100%	100%	(\$28.55)	1,584.76	1,430.44	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	5%	100%	\$279.89	3.22	3.09	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	5%	100%	\$27.96	2.15	2.04	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	5%	100%	\$75.02	0.63	0.60	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	4%	100%	(\$10.69)	10.53	10.01	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	4%	100%	\$52.79	6.04	5.79	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	4%	100%	(\$15.78)	6.27	5.97	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	4%	100%	\$69.57	4.62	4.48	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	4%	100%	(\$33.55)	33.23	32.15	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	16.45	15.27	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	0.98	0.92	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	2.18	2.02	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	18.47	17.36	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	4.59	4.31	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Small Retail	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	RTU	1 kBTU/hr	New	8.62	15	\$1.02	67%	100%	\$13.35	862.00	828.10	AEG BEST
Small Retail	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Small Retail	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$123.72	13.40	13.10	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Small Retail	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Cooling	Geothermal Heat Pump	1 kbtu/h	New	15.71	25	\$22.89	8%	100%	\$119.17	99.06	96.24	AEG BEST
Small Retail	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	Default
Small Retail	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$123.72	8.52	8.32	PTHP-Heating-AEG-v2-1
Small Retail	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	14%	100%	\$0.00	0.00	0.00	AEG BEST
Small Retail	Heating	Geothermal Heat Pump	1 kbtu/h	New	3.01	25	\$22.89	8%	100%	\$119.17	18.98	18.44	AEG BEST
Small Retail	Ventilation	Ventilation	1000 CFM	New	8,935.49	20	\$1,330.55	100%	100%	\$13.44	960.80	932.36	AEG-BEST
Small Retail	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	62%	100%	(\$437.10)	41.16	39.64	AEG-BEST
Small Retail	Interior Lighting	General Service Lighting	lamps	New	100.01	8	\$1.09	100%	100%	(\$46.32)	83.93	86.43	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Exempted Lighting	lamps	New	236.74	8	\$4.71	100%	100%	(\$5.49)	192.19	172.84	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	Linear Lighting	lamps	New	89.41	17	\$64.65	100%	100%	\$20.23	3,166.00	2,982.25	USDOE SSL Projections - 2016
Small Retail	Interior Lighting	High-Bay Lighting	lamps	New	526.76	15	\$6.29	100%	100%	(\$58.50)	1,870.23	1,717.20	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	General Service Lighting	lamps	New	152.51	8	\$1.06	100%	100%	(\$26.13)	55.92	52.50	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Linear Lighting	lamps	New	110.95	17	\$64.65	100%	100%	\$16.30	111.23	104.78	USDOE SSL Projections - 2016
Small Retail	Exterior Lighting	Area Lighting	lamps	New	940.06	15	\$157.49	100%	100%	(\$28.55)	962.75	888.29	USDOE SSL Projections - 2016
Small Retail	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	5%	100%	\$279.89	1.86	1.81	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	5%	100%	\$27.96	1.14	1.10	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	5%	100%	\$75.02	0.36	0.35	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Small Retail	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	4%	100%	(\$10.69)	6.05	5.83	COOK_OVN-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	4%	100%	\$52.79	3.45	3.34	COOK_FRY-Food Preparation-RTF-v2.3-1
Small Retail	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	4%	100%	(\$15.78)	3.50	3.38	DW-Food Preparation-XCELCO-2017-18-1
Small Retail	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	4%	100%	\$69.57	3.20	3.11	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Small Retail	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	4%	100%	(\$33.62)	22.29	21.55	COOK_STM-Food Preparation-RTF-v2.4-2
Small Retail	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	6.99	6.62	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.40	0.38	CEL_PCLT-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	0.76	0.72	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	7.38	7.02	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Small Retail	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	2.14	2.05	CEL_PCDT-Office Equipment-7PLN-v3-1
Small Retail	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	22%	100%	\$0.00	0.00	0.00	Standard
Small Retail	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Small Retail	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Small Retail	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Small Retail	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Small Retail	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	Existing	10.22	15	\$1.02	73%	100%	\$11.25	511.87	486.68	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	Existing	7,845.87	20	\$1,330.55	100%	100%	\$15.30	287.71	279.29	AEG-BEST
Restaurant	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	58%	100%	(\$437.10)	130.11	123.77	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	Existing	124.19	8	\$1.09	100%	100%	(\$30.32)	280.38	288.54	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	Existing	763.66	8	\$4.71	100%	100%	(\$1.70)	414.68	364.45	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	Existing	157.53	17	\$64.65	100%	100%	\$11.49	1,080.28	997.41	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	Existing	1,258.71	15	\$6.29	100%	100%	(\$25.26)	1,176.30	1,059.98	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	Existing	113.59	8	\$1.06	100%	100%	(\$29.33)	37.66	37.77	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	Existing	113.28	17	\$64.65	100%	100%	\$15.98	202.83	187.28	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	Existing	919.94	15	\$157.49	100%	100%	(\$29.16)	911.18	822.29	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	7%	100%	\$279.89	60.81	58.40	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	97%	100%	\$27.96	148.04	140.47	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	97%	100%	\$75.02	43.17	41.52	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Food Preparation	Oven	1 unit	Existing	0.00	10	\$1,104.16	0%	100%	\$0.00	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	Existing	0.00	8	\$814.12	0%	100%	\$0.00	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	53%	100%	(\$15.78)	929.52	885.13	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	Existing	0.00	20	\$882.04	0%	100%	\$0.00	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	0%	100%	\$0.00	0.00	0.00	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	9.94	9.23	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	0.47	0.45	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	1.32	1.22	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	50%	10%	\$0.04	7.32	6.89	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	2.77	2.61	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Restaurant	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Restaurant	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	RTU	1 kBTU/hr	New	7.49	15	\$1.02	73%	100%	\$15.34	247.60	237.86	AEG BEST
Restaurant	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	3%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Restaurant	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Restaurant	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	3%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Restaurant	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Restaurant	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	2%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Restaurant	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Restaurant	Ventilation	Ventilation	1000 CFM	New	6,806.82	20	\$1,330.55	100%	100%	\$17.64	222.57	215.98	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	58%	100%	(\$437.10)	77.79	74.91	AEG-BEST
Restaurant	Interior Lighting	General Service Lighting	lamps	New	124.19	8	\$1.09	100%	100%	(\$30.32)	122.18	112.04	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Exempted Lighting	lamps	New	763.66	8	\$4.71	100%	100%	(\$1.70)	177.60	162.21	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	Linear Lighting	lamps	New	157.53	17	\$64.65	100%	100%	\$11.49	621.48	585.32	USDOE SSL Projections - 2016
Restaurant	Interior Lighting	High-Bay Lighting	lamps	New	1,258.71	15	\$6.29	100%	100%	(\$25.26)	672.72	617.03	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	General Service Lighting	lamps	New	113.59	8	\$1.06	100%	100%	(\$29.33)	13.04	11.52	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Linear Lighting	lamps	New	113.28	17	\$64.65	100%	100%	\$15.98	116.69	109.90	USDOE SSL Projections - 2016
Restaurant	Exterior Lighting	Area Lighting	lamps	New	919.94	15	\$157.49	100%	100%	(\$29.16)	574.46	531.42	USDOE SSL Projections - 2016
Restaurant	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	74%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Restaurant	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	7%	100%	\$279.89	35.21	34.13	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	97%	100%	\$27.96	78.71	75.79	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Restaurant	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	97%	100%	\$75.02	25.15	24.41	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Food Preparation	Oven	1 unit	New	0.00	10	\$1,104.16	0%	100%	\$0.00	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Fryer	1 unit	New	0.00	8	\$814.12	0%	100%	\$0.00	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Restaurant	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	53%	100%	(\$15.78)	519.49	500.95	DW-Food Preparation-XCELCO-2017-18-1
Restaurant	Food Preparation	Hot Food Container	1 unit	New	0.00	20	\$882.04	0%	100%	\$0.00	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Restaurant	Food Preparation	Steamer	1 unit	New	0.00	20	\$142.38	0%	100%	\$0.00	0.00	0.00	COOK_STM-Food Preparation-RTF-v2.4-2
Restaurant	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	4.22	4.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.20	0.19	CEL_PCLT-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	0.46	0.43	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	50%	10%	\$0.04	2.90	2.76	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Restaurant	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	1.30	1.24	CEL_PCDT-Office Equipment-7PLN-v3-1
Restaurant	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	20%	100%	\$0.00	0.00	0.00	Standard
Restaurant	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Restaurant	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Restaurant	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Restaurant	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	51.39	20	\$18.63	1%	100%	\$36.13	8.01	7.67	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	92.31	25	\$20.82	0%	100%	\$20.72	7.81	7.50	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	Existing	17.86	15	\$1.02	71%	100%	\$6.44	367.58	349.34	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	2%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$115.02	0.00	3.10	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	1%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	7%	100%	\$115.02	0.00	0.22	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	Existing	10,858.56	20	\$1,330.55	100%	100%	\$11.06	161.38	156.62	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	63%	100%	(\$437.10)	25.52	24.26	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	Existing	162.77	8	\$1.09	100%	100%	(\$23.87)	65.58	67.43	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	Existing	315.77	8	\$4.71	100%	100%	(\$4.12)	67.64	59.44	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Interior Lighting	Linear Lighting	lamps	Existing	188.87	17	\$64.65	100%	100%	\$9.54	2,038.83	1,878.35	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	Existing	971.45	15	\$6.29	100%	100%	(\$31.48)	775.89	689.08	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	Existing	168.45	8	\$1.06	100%	100%	(\$25.00)	37.22	42.80	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Linear Lighting	lamps	Existing	106.74	17	\$64.65	100%	100%	\$16.88	134.84	124.24	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	Existing	886.63	15	\$157.49	100%	100%	(\$30.20)	592.87	534.39	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	83%	100%	\$279.89	55.84	53.62	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	99%	100%	\$27.96	11.70	11.10	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	99%	100%	\$75.02	6.77	6.51	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	11%	100%	(\$10.69)	16.61	15.79	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	87%	100%	\$52.79	75.29	72.10	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	55%	100%	(\$15.78)	49.45	47.07	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	73%	100%	\$69.57	48.48	46.96	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Grocery	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	20%	100%	(\$33.55)	95.56	92.43	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	3.95	3.67	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	64%	10%	\$0.08	0.15	0.15	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	0.52	0.49	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	2.19	2.06	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	1.37	1.28	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	43.47	20	\$18.63	1%	100%	\$42.72	4.87	4.70	AEG BEST
Grocery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	73.41	25	\$20.82	0%	100%	\$26.05	4.96	4.77	AEG BEST
Grocery	Cooling	RTU	1 kBTU/hr	New	15.82	15	\$1.02	71%	100%	\$7.27	236.91	227.53	AEG BEST
Grocery	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	2%	100%	\$114.41	11.36	11.07	PTAC-Cooling-AEG-v2-1
Grocery	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$85.97	4.19	4.05	PTHP-Cooling-AEG-v2-1
Grocery	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	1%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Grocery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$104.00	15.78	15.44	AEG BEST
Grocery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	6%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Grocery	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	1%	100%	\$85.97	1.18	1.14	PTHP-Heating-AEG-v2-1
Grocery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	7%	100%	\$104.00	1.60	1.56	AEG BEST
Grocery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Grocery	Ventilation	Ventilation	1000 CFM	New	14,869.47	20	\$1,330.55	100%	100%	\$8.07	230.01	223.18	AEG-BEST
Grocery	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	63%	100%	(\$437.10)	16.96	16.33	AEG-BEST
Grocery	Interior Lighting	General Service Lighting	lamps	New	162.77	8	\$1.09	100%	100%	(\$23.87)	39.45	36.89	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Exempted Lighting	lamps	New	315.77	8	\$4.71	100%	100%	(\$4.12)	24.35	21.79	USDOE SSL Projections - 2016
Grocery	Interior Lighting	Linear Lighting	lamps	New	188.87	17	\$64.65	100%	100%	\$9.54	1,294.83	1,217.63	USDOE SSL Projections - 2016
Grocery	Interior Lighting	High-Bay Lighting	lamps	New	971.45	15	\$6.29	100%	100%	(\$31.48)	569.52	523.59	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	General Service Lighting	lamps	New	168.45	8	\$1.06	100%	100%	(\$25.00)	15.37	14.82	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Exterior Lighting	Linear Lighting	lamps	New	106.74	17	\$64.65	100%	100%	\$16.88	85.64	80.54	USDOE SSL Projections - 2016
Grocery	Exterior Lighting	Area Lighting	lamps	New	886.63	15	\$157.49	100%	100%	(\$30.20)	424.06	392.80	USDOE SSL Projections - 2016
Grocery	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	16%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Grocery	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	83%	100%	\$279.89	35.91	34.80	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	95%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	99%	100%	\$27.96	6.88	6.62	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	99%	100%	\$75.02	4.40	4.27	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Grocery	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	11%	100%	(\$10.69)	10.60	10.22	COOK_OVN-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	87%	100%	\$52.79	47.77	46.23	COOK_FRY-Food Preparation-RTF-v2.3-1
Grocery	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	55%	100%	(\$15.78)	30.63	29.53	DW-Food Preparation-XCELCO-2017-18-1
Grocery	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	73%	100%	\$69.57	37.05	36.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Grocery	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	20%	100%	(\$33.62)	70.78	68.41	COOK_STM-Food Preparation-RTF-v2.4-2
Grocery	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	1.84	1.74	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	64%	10%	\$0.08	0.07	0.07	CEL_PCLT-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	0.20	0.19	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	0.97	0.93	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Grocery	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	0.71	0.67	CEL_PCDT-Office Equipment-7PLN-v3-1
Grocery	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	35%	100%	\$0.00	0.00	0.00	Standard
Grocery	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Grocery	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Grocery	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Grocery	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Grocery	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	50.53	20	\$18.63	17%	100%	\$36.75	549.72	526.93	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	76.68	25	\$20.82	67%	100%	\$24.25	3,819.87	3,668.64	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	Existing	17.15	15	\$1.02	11%	100%	\$6.70	147.79	140.44	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	Existing	275.66	15	\$210.81	0%	100%	\$86.63	6.54	6.25	PTAC-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	5.25	15	\$2.34	1%	100%	\$67.21	6.71	5.69	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	22.49	25	\$22.89	1%	100%	\$78.51	7.43	7.21	AEG BEST
Health	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	2.44	15	\$2.34	1%	100%	\$67.21	1.65	1.46	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	5.92	25	\$22.89	1%	100%	\$78.51	1.95	1.90	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	Existing	34,410.01	20	\$1,330.55	100%	100%	\$3.49	1,285.64	1,247.67	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	4%	100%	(\$437.10)	6.59	6.27	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	Existing	103.15	8	\$1.09	100%	100%	(\$26.44)	269.57	235.09	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	Existing	173.37	8	\$4.71	100%	100%	(\$7.49)	125.40	110.10	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	Existing	166.92	17	\$64.65	100%	100%	\$10.85	4,210.61	3,882.27	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	Existing	962.77	15	\$6.29	100%	100%	(\$31.89)	2,191.59	1,944.54	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	Existing	88.56	8	\$1.06	100%	100%	(\$32.13)	13.52	12.32	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	Existing	109.59	17	\$64.65	100%	100%	\$16.53	75.09	69.25	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	Existing	885.35	15	\$157.49	100%	100%	(\$30.25)	575.21	518.56	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	50%	100%	\$279.89	13.43	12.89	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	90%	100%	\$27.96	17.10	16.22	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	90%	100%	\$75.02	4.94	4.75	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	70%	100%	(\$10.69)	214.61	203.98	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	81%	100%	\$52.79	142.25	136.21	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	53%	100%	(\$15.78)	98.27	93.54	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	53%	100%	\$69.57	72.40	70.13	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	53%	100%	(\$33.55)	521.02	503.93	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	34.47	32.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	0.82	0.77	CEL_PCLT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	4.58	4.25	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	3.81	3.58	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	2.38	2.24	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Health	Cooling	Air-Cooled Chiller	1 kbtu/h	New	37.16	20	\$18.63	17%	100%	\$49.97	295.50	284.68	AEG BEST
Health	Cooling	Water-Cooled Chiller	1 kbtu/h	New	53.22	25	\$20.82	67%	100%	\$34.95	2,180.51	2,097.22	AEG BEST
Health	Cooling	RTU	1 kBTU/hr	New	12.79	15	\$1.02	11%	100%	\$8.99	82.70	79.42	AEG BEST
Health	Cooling	PTAC	12 kBTU/hr	New	246.72	15	\$210.81	0%	100%	\$78.33	10.63	9.37	PTAC-Cooling-AEG-v2-1
Health	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$401.71	0%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Health	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Health	Cooling	Air-Source Heat Pump	1 kbtu/h	New	5.03	15	\$2.34	1%	100%	\$58.17	2.48	2.31	AEG BEST
Health	Cooling	Geothermal Heat Pump	1 kbtu/h	New	22.49	25	\$22.89	1%	100%	\$78.51	6.27	6.09	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Health	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Health	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$401.71	0%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Health	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.19	15	\$2.34	1%	100%	\$58.17	0.42	0.40	AEG BEST
Health	Heating	Geothermal Heat Pump	1 kbtu/h	New	5.92	25	\$22.89	1%	100%	\$78.51	1.65	1.60	AEG BEST
Health	Ventilation	Ventilation	1000 CFM	New	25,862.24	20	\$1,330.55	100%	100%	\$4.64	1,105.29	1,072.40	AEG-BEST
Health	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	4%	100%	(\$437.10)	4.53	4.36	AEG-BEST
Health	Interior Lighting	General Service Lighting	lamps	New	103.15	8	\$1.09	100%	100%	(\$26.44)	137.51	117.65	USDOE SSL Projections - 2016
Health	Interior Lighting	Exempted Lighting	lamps	New	173.37	8	\$4.71	100%	100%	(\$7.49)	46.14	41.23	USDOE SSL Projections - 2016
Health	Interior Lighting	Linear Lighting	lamps	New	166.92	17	\$64.65	100%	100%	\$10.85	2,757.87	2,594.76	USDOE SSL Projections - 2016
Health	Interior Lighting	High-Bay Lighting	lamps	New	962.77	15	\$6.29	100%	100%	(\$31.89)	1,600.29	1,465.71	USDOE SSL Projections - 2016
Health	Exterior Lighting	General Service Lighting	lamps	New	88.56	8	\$1.06	100%	100%	(\$32.13)	5.59	4.74	USDOE SSL Projections - 2016
Health	Exterior Lighting	Linear Lighting	lamps	New	109.59	17	\$64.65	100%	100%	\$16.53	49.19	46.28	USDOE SSL Projections - 2016
Health	Exterior Lighting	Area Lighting	lamps	New	885.35	15	\$157.49	100%	100%	(\$30.25)	428.94	397.69	USDOE SSL Projections - 2016
Health	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	33%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Health	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	50%	100%	\$279.89	8.93	8.65	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	90%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	90%	100%	\$27.96	10.38	9.99	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	90%	100%	\$75.02	3.32	3.22	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Health	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	70%	100%	(\$10.69)	141.48	136.40	COOK_OVN-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	81%	100%	\$52.79	93.33	90.33	COOK_FRY-Food Preparation-RTF-v2.3-1
Health	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	53%	100%	(\$15.78)	62.88	60.62	DW-Food Preparation-XCELCO-2017-18-1
Health	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	53%	100%	\$69.57	57.07	55.45	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Health	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	53%	100%	(\$33.62)	398.26	384.91	COOK_STM-Food Preparation-RTF-v2.4-2
Health	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	16.55	15.67	CEL_PCDT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.38	0.36	CEL_PCLT-Office Equipment-7PLN-v3-1
Health	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	1.81	1.70	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	1.75	1.66	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Health	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	1.27	1.21	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	74%	100%	\$0.00	0.00	0.00	Standard
Health	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Health	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Health	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	63%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Health	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	58%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Health	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	41.59	20	\$18.63	27%	100%	\$44.65	1,943.08	1,862.20	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	Existing	7.91	15	\$1.02	45%	100%	\$14.53	625.78	594.53	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	Existing	127.15	15	\$210.81	3%	100%	\$187.81	51.09	48.86	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	Existing	127.15	15	\$200.86	2%	100%	\$83.96	35.77	34.21	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	10.36	25	\$22.89	5%	100%	\$148.34	48.66	47.22	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	Existing	143.84	15	\$200.86	2%	100%	\$83.96	40.47	38.71	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	4.67	25	\$22.89	5%	100%	\$148.34	21.94	21.29	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Ventilation	Ventilation	1000 CFM	Existing	15,690.21	20	\$1,330.55	100%	100%	\$7.65	1,450.11	1,407.10	AEG-BEST
College	Water Heating	Water Heater	1 kBtu/hr	Existing	1.24	13	\$1.69	64%	100%	(\$437.10)	127.13	120.78	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	Existing	56.03	8	\$1.09	100%	100%	(\$47.53)	119.19	101.75	USDOE SSL Projections - 2016
College	Interior Lighting	Exempted Lighting	lamps	Existing	44.98	8	\$4.71	100%	100%	(\$28.91)	36.98	32.48	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	Existing	92.89	17	\$64.65	100%	100%	\$19.51	4,945.01	4,561.31	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	Existing	523.20	15	\$6.29	100%	100%	(\$58.94)	2,892.90	2,576.35	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	Existing	178.06	8	\$1.06	100%	100%	(\$24.14)	7.57	9.53	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	Existing	102.89	17	\$64.65	100%	100%	\$17.62	1,477.66	1,363.01	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	Existing	681.68	15	\$157.49	100%	100%	(\$39.32)	544.13	490.94	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	13%	100%	\$279.89	9.93	9.53	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	27%	100%	\$27.96	6.98	6.62	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	27%	100%	\$75.02	2.01	1.93	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	21%	100%	(\$10.69)	61.59	58.53	COOK_OVN-Food Preparation-RTF-v2.3-1
College	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	21%	100%	\$52.79	35.19	33.69	COOK_FRY-Food Preparation-RTF-v2.3-1
College	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	21%	100%	(\$15.78)	36.77	34.99	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	21%	100%	\$69.57	27.08	26.23	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	21%	100%	(\$33.55)	194.95	188.54	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	60.24	55.91	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	1.07	1.00	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	8.01	7.42	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	6.61	6.21	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	2.08	1.95	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	Existing	150.87	7	\$234.00	90%	100%	\$46.51	16.61	15.82	CPLPUMP-Miscellaneous-RTF-v2.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Miscellaneous	Pool Heater	1 unit	Existing	506.72	2	\$1.00	36%	100%	\$0.71	0.47	0.44	TBD
College	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
College	Cooling	Air-Cooled Chiller	1 kbtu/h	New	26.38	20	\$2.19	27%	100%	\$62.51	1,067.24	1,028.11	AEG BEST
College	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	RTU	1 kBTU/hr	New	5.65	15	\$1.02	45%	100%	\$20.34	352.37	338.34	AEG BEST
College	Cooling	PTAC	12 kBTU/hr	New	113.80	15	\$210.81	3%	100%	\$209.84	36.71	35.42	PTAC-Cooling-AEG-v2-1
College	Cooling	PTHP	12 kBTU/hr	New	113.80	15	\$200.86	2%	100%	\$73.51	63.18	55.75	PTHP-Cooling-AEG-v2-1
College	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
College	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Cooling	Geothermal Heat Pump	1 kbtu/h	New	10.36	25	\$22.89	5%	100%	\$148.34	43.09	41.85	AEG BEST
College	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
College	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	16%	100%	\$0.00	0.00	0.00	Default
College	Heating	PTHP	12 kBTU/hr	New	142.09	15	\$200.86	2%	100%	\$73.51	74.07	65.64	PTHP-Heating-AEG-v2-1
College	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	8%	100%	\$0.00	0.00	0.00	AEG BEST
College	Heating	Geothermal Heat Pump	1 kbtu/h	New	4.67	25	\$22.89	5%	100%	\$148.34	19.43	18.87	AEG BEST
College	Ventilation	Ventilation	1000 CFM	New	15,884.60	20	\$1,330.55	100%	100%	\$7.56	1,652.22	1,602.93	AEG-BEST
College	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	64%	100%	(\$437.10)	92.22	88.78	AEG-BEST
College	Interior Lighting	General Service Lighting	lamps	New	56.03	8	\$1.09	100%	100%	(\$47.53)	81.94	72.21	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Interior Lighting	Exempted Lighting	lamps	New	44.98	8	\$4.71	100%	100%	(\$28.91)	13.32	11.89	USDOE SSL Projections - 2016
College	Interior Lighting	Linear Lighting	lamps	New	92.89	17	\$64.65	100%	100%	\$19.51	3,404.62	3,204.31	USDOE SSL Projections - 2016
College	Interior Lighting	High-Bay Lighting	lamps	New	523.20	15	\$6.29	100%	100%	(\$58.94)	2,301.35	2,119.69	USDOE SSL Projections - 2016
College	Exterior Lighting	General Service Lighting	lamps	New	178.06	8	\$1.06	100%	100%	(\$24.14)	3.03	3.08	USDOE SSL Projections - 2016
College	Exterior Lighting	Linear Lighting	lamps	New	102.89	17	\$64.65	100%	100%	\$17.62	1,017.37	957.51	USDOE SSL Projections - 2016
College	Exterior Lighting	Area Lighting	lamps	New	681.68	15	\$157.49	100%	100%	(\$39.32)	430.60	399.77	USDOE SSL Projections - 2016
College	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	8%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
College	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	13%	100%	\$279.89	6.96	6.74	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	27%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	27%	100%	\$27.96	4.45	4.29	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	27%	100%	\$75.02	1.43	1.38	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
College	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	21%	100%	(\$10.69)	42.77	41.23	COOK_OVN-Food Preparation-v2.3-1
College	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	21%	100%	\$52.79	24.36	23.58	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	21%	100%	(\$15.78)	24.78	23.89	DW-Food Preparation-XCELCO-2017-18-1
College	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	21%	100%	\$69.57	22.43	21.79	COOK_HFCNT-Food Preparation-RTF-v2.3-2
College	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	21%	100%	(\$33.62)	156.68	151.41	COOK_STM-Food Preparation-RTF-v2.4-2
College	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	30.30	28.68	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.53	0.50	CEL_PCLT-Office Equipment-7PLN-v3-1
College	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	3.32	3.12	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	3.20	3.04	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
College	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	1.16	1.11	CEL_PCDT-Office Equipment-7PLN-v3-1
College	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	89%	100%	\$0.00	0.00	0.00	Standard
College	Miscellaneous	Pool Pump	1 unit	New	150.87	7	\$234.00	90%	100%	\$46.51	11.61	11.24	CPLPUMP-Miscellaneous-RTF-v2.1-1
College	Miscellaneous	Pool Heater	1 unit	New	506.72	2	\$1.00	36%	100%	\$0.71	0.11	0.10	TBD
College	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
College	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
College	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	20.18	20	\$2.19	22%	100%	\$58.45	1,088.57	1,043.86	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	Existing	3.96	15	\$1.02	36%	100%	\$29.07	355.16	337.54	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	Existing	63.57	15	\$210.81	2%	100%	\$375.63	29.11	27.85	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	Existing	63.57	15	\$200.86	2%	100%	\$151.89	20.38	19.50	PTHP-Cooling-AEG-v2-1
School	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	5.18	25	\$22.89	4%	100%	\$279.42	27.74	26.92	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	Existing	86.22	15	\$200.86	2%	100%	\$151.89	27.64	26.45	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	2.80	25	\$22.89	4%	100%	\$279.42	14.99	14.55	AEG BEST
School	Ventilation	Ventilation	1000 CFM	Existing	7,685.36	20	\$1,330.55	100%	100%	\$15.62	1,001.87	972.35	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	50%	100%	(\$437.10)	69.86	66.41	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	Existing	83.88	8	\$1.09	100%	100%	(\$58.20)	153.45	193.92	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	Existing	232.44	8	\$4.71	100%	100%	(\$5.59)	243.82	214.16	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	Existing	69.76	17	\$64.65	100%	100%	\$25.91	4,907.23	4,531.46	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	Existing	377.85	15	\$6.29	100%	100%	(\$81.30)	2,321.83	2,067.77	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	Existing	61.21	8	\$1.06	100%	100%	(\$35.98)	4.61	3.76	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Exterior Lighting	Linear Lighting	lamps	Existing	103.29	17	\$64.65	100%	100%	\$17.50	1,861.79	1,719.24	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	Existing	644.03	15	\$157.49	100%	100%	(\$41.70)	331.00	299.40	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	33%	100%	\$279.89	36.56	35.10	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	66%	100%	\$27.96	25.60	24.29	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	66%	100%	\$75.02	7.41	7.12	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	65%	100%	(\$10.69)	131.21	124.73	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	59%	100%	\$52.79	67.99	65.10	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	52%	100%	(\$15.78)	63.22	60.18	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	52%	100%	\$69.57	46.58	45.12	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	52%	100%	(\$33.55)	335.14	324.17	COOK_STM-Food Preparation-RTF-v2.4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	51.32	47.64	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	1.22	1.14	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	6.82	6.32	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	11.40	10.71	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	36%	10%	\$0.02	0.52	0.49	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	Existing	150.87	7	\$234.00	6%	100%	\$46.51	1.91	1.82	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	Existing	506.72	2	\$1.00	1%	100%	\$0.71	0.01	0.01	TBD
School	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
School	Cooling	Air-Cooled Chiller	1 kbtu/h	New	13.19	20	\$2.19	22%	100%	\$16.57	543.97	524.07	AEG BEST
School	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	RTU	1 kBTU/hr	New	2.83	15	\$1.02	36%	100%	\$40.67	184.73	177.42	AEG BEST
School	Cooling	PTAC	12 kBTU/hr	New	56.90	15	\$210.81	2%	100%	\$419.69	19.25	18.57	PTAC-Cooling-AEG-v2-1
School	Cooling	PTHP	12 kBTU/hr	New	56.90	15	\$200.86	2%	100%	\$160.15	13.48	13.00	PTHP-Cooling-AEG-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
School	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Cooling	Geothermal Heat Pump	1 kbtu/h	New	5.18	25	\$22.89	4%	100%	\$279.42	22.72	22.07	AEG BEST
School	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
School	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
School	Heating	PTHP	12 kBTU/hr	New	85.17	15	\$200.86	2%	100%	\$160.15	20.17	19.46	PTHP-Heating-AEG-v2-1
School	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	6%	100%	\$0.00	0.00	0.00	AEG BEST
School	Heating	Geothermal Heat Pump	1 kbtu/h	New	2.80	25	\$22.89	4%	100%	\$279.42	12.28	11.93	AEG BEST
School	Ventilation	Ventilation	1000 CFM	New	7,780.57	20	\$1,330.55	100%	100%	\$15.43	1,051.19	1,019.95	AEG-BEST
School	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	50%	100%	(\$437.10)	46.44	44.71	AEG-BEST
School	Interior Lighting	General Service Lighting	lamps	New	83.88	8	\$1.09	100%	100%	(\$58.20)	98.03	100.22	USDOE SSL Projections - 2016
School	Interior Lighting	Exempted Lighting	lamps	New	232.44	8	\$4.71	100%	100%	(\$5.59)	82.78	73.94	USDOE SSL Projections - 2016
School	Interior Lighting	Linear Lighting	lamps	New	69.76	17	\$64.65	100%	100%	\$25.91	3,105.31	2,924.42	USDOE SSL Projections - 2016
School	Interior Lighting	High-Bay Lighting	lamps	New	377.85	15	\$6.29	100%	100%	(\$81.30)	1,706.76	1,572.21	USDOE SSL Projections - 2016
School	Exterior Lighting	General Service Lighting	lamps	New	61.21	8	\$1.06	100%	100%	(\$35.98)	2.09	1.71	USDOE SSL Projections - 2016
School	Exterior Lighting	Linear Lighting	lamps	New	103.29	17	\$64.65	100%	100%	\$17.50	1,178.11	1,109.49	USDOE SSL Projections - 2016
School	Exterior Lighting	Area Lighting	lamps	New	644.03	15	\$157.49	100%	100%	(\$41.70)	242.64	225.71	USDOE SSL Projections - 2016
School	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	19%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	33%	100%	\$279.89	23.51	22.78	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	66%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	66%	100%	\$27.96	15.05	14.49	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	66%	100%	\$75.02	4.81	4.67	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
School	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	65%	100%	(\$10.69)	83.70	80.70	COOK_OVN-Food Preparation-RTF-v2.3-1
School	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	59%	100%	\$52.79	43.13	41.74	COOK_FRY-Food Preparation-RTF-v2.3-1
School	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	52%	100%	(\$15.78)	39.15	37.75	DW-Food Preparation-XCELCO-2017-18-1
School	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	52%	100%	\$69.57	35.60	34.59	COOK_HFCNT-Food Preparation-RTF-v2.3-2
School	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	52%	100%	(\$33.62)	248.25	239.94	COOK_STM-Food Preparation-RTF-v2.4-2
School	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	23.93	22.66	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.55	0.53	CEL_PCLT-Office Equipment-7PLN-v3-1
School	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	2.61	2.46	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
School	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	5.05	4.81	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
School	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	36%	10%	\$0.02	0.26	0.25	CEL_PCDT-Office Equipment-7PLN-v3-1
School	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	44%	100%	\$0.00	0.00	0.00	Standard
School	Miscellaneous	Pool Pump	1 unit	New	150.87	7	\$234.00	6%	100%	\$46.51	1.22	1.18	CPLPUMP-Miscellaneous-RTF-v2.1-1
School	Miscellaneous	Pool Heater	1 unit	New	506.72	2	\$1.00	1%	100%	\$0.71	0.00	0.00	TBD
School	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
School	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	11%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
School	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	7.31	20	\$2.19	2%	100%	\$29.91	15.64	15.00	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	14.80	25	\$7.67	7%	100%	\$50.49	111.51	107.04	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	Existing	7.92	15	\$1.02	16%	100%	\$14.51	148.83	141.53	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	Existing	127.36	15	\$210.81	39%	100%	\$187.50	463.72	443.94	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	Existing	127.36	15	\$200.86	13%	100%	\$124.15	156.11	149.45	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	2.96	15	\$2.34	5%	100%	\$69.90	11.89	11.52	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	16.11	25	\$22.89	5%	100%	\$125.15	51.19	49.70	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	Existing	55.90	15	\$200.86	13%	100%	\$124.15	68.52	65.60	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.82	15	\$2.34	5%	100%	\$69.90	3.30	3.20	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	1.71	25	\$22.89	5%	100%	\$125.15	5.44	5.28	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	Existing	7,495.35	20	\$1,330.55	100%	100%	\$16.02	452.56	439.36	AEG-BEST
Lodging	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	50%	100%	(\$437.10)	146.03	138.94	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	Existing	51.46	8	\$1.09	100%	100%	(\$56.70)	717.69	644.62	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	Existing	261.75	8	\$4.71	100%	100%	(\$4.97)	606.72	532.78	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	Existing	77.53	17	\$64.65	100%	100%	\$23.39	1,056.81	978.36	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	Existing	691.62	15	\$6.29	100%	100%	(\$44.69)	786.90	701.19	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	Existing	56.67	8	\$1.06	100%	100%	(\$36.95)	35.22	28.14	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	Existing	107.46	17	\$64.65	100%	100%	\$16.88	51.92	48.07	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	Existing	822.55	15	\$157.49	100%	100%	(\$32.28)	3,177.59	2,865.90	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	19%	100%	\$279.89	16.62	15.97	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	59%	100%	\$27.96	18.02	17.10	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	59%	100%	\$75.02	10.54	10.14	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	14%	100%	(\$10.69)	42.66	40.58	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	21%	100%	\$52.79	37.29	35.72	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	30%	100%	(\$15.78)	55.25	52.62	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	30%	100%	\$69.57	40.73	39.47	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	30%	100%	(\$33.55)	292.80	283.28	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	10.18	9.45	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	0.61	0.57	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	1.35	1.25	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	5.73	5.39	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	58%	10%	\$0.02	0.83	0.78	CEL_PCDT-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	Existing	150.87	7	\$234.00	76%	100%	\$46.51	14.83	14.14	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	Existing	506.72	2	\$1.00	27%	100%	\$0.71	0.35	0.33	TBD
Lodging	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Lodging	Cooling	Air-Cooled Chiller	1 kbtu/h	New	7.01	20	\$2.19	2%	100%	\$31.18	10.26	9.88	AEG BEST
Lodging	Cooling	Water-Cooled Chiller	1 kbtu/h	New	12.58	25	\$7.67	7%	100%	\$59.40	66.19	63.63	AEG BEST
Lodging	Cooling	RTU	1 kBTU/hr	New	7.74	15	\$1.02	16%	100%	\$14.86	92.27	88.65	AEG BEST
Lodging	Cooling	PTAC	12 kBTU/hr	New	113.99	15	\$210.81	39%	100%	\$209.49	266.56	257.27	PTAC-Cooling-AEG-v2-1
Lodging	Cooling	PTHP	12 kBTU/hr	New	113.99	15	\$200.86	13%	100%	\$134.46	89.74	86.61	PTHP-Cooling-AEG-v2-1
Lodging	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Lodging	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.99	15	\$2.34	5%	100%	\$71.17	8.11	7.90	AEG BEST
Lodging	Cooling	Geothermal Heat Pump	1 kbtu/h	New	16.11	25	\$22.89	5%	100%	\$125.15	36.76	35.72	AEG BEST
Lodging	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	51%	100%	\$0.00	0.00	0.00	Default
Lodging	Heating	PTHP	12 kBTU/hr	New	55.22	15	\$200.86	13%	100%	\$134.46	43.47	41.96	PTHP-Heating-AEG-v2-1
Lodging	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.73	15	\$2.34	5%	100%	\$71.17	1.98	1.93	AEG BEST
Lodging	Heating	Geothermal Heat Pump	1 kbtu/h	New	1.71	25	\$22.89	5%	100%	\$125.15	3.91	3.80	AEG BEST
Lodging	Ventilation	Ventilation	1000 CFM	New	6,298.94	20	\$1,330.55	100%	100%	\$19.06	349.97	339.63	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Water Heating	Water Heater	1 kBtu/hr	New	1.24	13	\$1.69	50%	100%	(\$437.10)	83.83	80.73	AEG-BEST
Lodging	Interior Lighting	General Service Lighting	lamps	New	51.46	8	\$1.09	100%	100%	(\$56.70)	294.61	253.02	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Exempted Lighting	lamps	New	261.75	8	\$4.71	100%	100%	(\$4.97)	217.44	196.46	USDOE SSL Projections - 2016
Lodging	Interior Lighting	Linear Lighting	lamps	New	77.53	17	\$64.65	100%	100%	\$23.39	580.93	547.97	USDOE SSL Projections - 2016
Lodging	Interior Lighting	High-Bay Lighting	lamps	New	691.62	15	\$6.29	100%	100%	(\$44.69)	409.57	370.75	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	General Service Lighting	lamps	New	56.67	8	\$1.06	100%	100%	(\$36.95)	16.70	14.01	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Linear Lighting	lamps	New	107.46	17	\$64.65	100%	100%	\$16.88	28.54	26.92	USDOE SSL Projections - 2016
Lodging	Exterior Lighting	Area Lighting	lamps	New	822.55	15	\$157.49	100%	100%	(\$32.28)	2,036.29	1,890.86	USDOE SSL Projections - 2016
Lodging	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Lodging	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	19%	100%	\$279.89	9.24	8.96	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	59%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	59%	100%	\$27.96	9.22	8.88	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Lodging	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	59%	100%	\$75.02	5.89	5.72	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	14%	100%	(\$10.69)	23.54	22.70	COOK_OVN-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	21%	100%	\$52.79	20.43	19.78	COOK_FRY-Food Preparation-RTF-v2.3-1
Lodging	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	30%	100%	(\$15.78)	29.67	28.62	DW-Food Preparation-XCELCO-2017-18-1
Lodging	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	30%	100%	\$69.57	27.17	26.40	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Lodging	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	30%	100%	(\$33.62)	189.00	182.71	COOK_STM-Food Preparation-RTF-v2.4-2
Lodging	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	4.16	3.95	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.24	0.23	CEL_PCLT-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	0.45	0.43	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	2.20	2.09	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Lodging	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	58%	10%	\$0.02	0.37	0.35	CEL_PCDT-Office Equipment-7PLN-v3-1
Lodging	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	91%	100%	\$0.00	0.00	0.00	Standard
Lodging	Miscellaneous	Pool Pump	1 unit	New	150.87	7	\$234.00	76%	100%	\$46.51	8.09	7.83	CPLPUMP-Miscellaneous-RTF-v2.1-1
Lodging	Miscellaneous	Pool Heater	1 unit	New	506.72	2	\$1.00	27%	100%	\$0.71	0.06	0.06	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	67%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Lodging	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	26%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Lodging	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.00	20	\$18.63	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	Existing	10.67	15	\$1.02	16%	100%	\$10.77	446.43	424.35	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	Existing	171.53	15	\$210.81	1%	100%	\$139.21	37.05	35.45	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	Existing	171.53	15	\$200.86	0%	100%	\$57.37	10.43	9.98	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	3.28	15	\$2.34	2%	100%	\$40.00	11.51	11.08	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	Existing	225.05	15	\$200.86	0%	100%	\$57.37	13.68	13.09	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	3.34	15	\$2.34	2%	100%	\$40.00	11.75	11.32	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	Existing	3,869.63	20	\$1,330.55	100%	100%	\$31.03	541.16	525.27	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	52%	100%	(\$437.10)	34.23	32.55	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	Existing	49.84	8	\$1.09	100%	100%	(\$60.98)	195.88	179.09	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	Existing	26.26	8	\$4.71	100%	100%	(\$49.50)	96.19	84.48	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Interior Lighting	Linear Lighting	lamps	Existing	70.98	17	\$64.65	100%	100%	\$25.52	1,828.20	1,687.96	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	Existing	410.76	15	\$6.29	100%	100%	(\$75.34)	9,973.96	8,906.59	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	Existing	57.28	8	\$1.06	100%	100%	(\$35.38)	30.26	24.47	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Linear Lighting	lamps	Existing	114.48	17	\$64.65	100%	100%	\$15.83	452.44	418.02	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	Existing	808.58	15	\$157.49	100%	100%	(\$33.11)	1,919.89	1,731.42	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	2%	100%	\$279.89	5.98	5.74	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	10%	100%	\$27.96	10.60	10.06	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	10%	100%	\$75.02	3.08	2.96	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	2%	100%	(\$10.69)	2.59	2.47	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	2%	100%	\$52.79	1.49	1.42	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	2%	100%	(\$15.78)	1.55	1.47	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	2%	100%	\$69.57	1.14	1.10	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	2%	100%	(\$33.55)	8.20	7.93	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	32.84	30.49	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	1.56	1.47	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	4.36	4.04	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	89%	10%	\$0.04	33.90	31.86	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	77%	10%	\$0.02	7.05	6.62	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.00	20	\$2.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.00	25	\$20.82	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Cooling	RTU	1 kBTU/hr	New	7.15	15	\$1.02	16%	100%	\$16.08	208.31	200.09	AEG BEST
Warehouse	Cooling	PTAC	12 kBTU/hr	New	151.07	15	\$210.81	1%	100%	\$158.07	23.04	22.23	PTAC-Cooling-AEG-v2-1
Warehouse	Cooling	PTHP	12 kBTU/hr	New	151.07	15	\$200.86	0%	100%	\$50.58	17.61	16.69	PTHP-Cooling-AEG-v2-1
Warehouse	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.56	15	\$2.34	2%	100%	\$58.03	6.56	6.36	AEG BEST
Warehouse	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	4%	100%	\$0.00	0.00	0.00	Default
Warehouse	Heating	PTHP	12 kBTU/hr	New	209.57	15	\$200.86	0%	100%	\$50.58	22.88	21.70	PTHP-Heating-AEG-v2-1
Warehouse	Heating	Air-Source Heat Pump	1 kbtu/h	New	2.01	15	\$2.34	2%	100%	\$58.03	5.14	4.99	AEG BEST
Warehouse	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse	Ventilation	Ventilation	1000 CFM	New	3,335.58	20	\$1,330.55	100%	100%	\$36.00	433.17	420.32	AEG-BEST
Warehouse	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	52%	100%	(\$437.10)	21.70	20.89	AEG-BEST
Warehouse	Interior Lighting	General Service Lighting	lamps	New	49.84	8	\$1.09	100%	100%	(\$60.98)	90.41	78.61	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Exempted Lighting	lamps	New	26.26	8	\$4.71	100%	100%	(\$49.50)	31.06	27.75	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	Linear Lighting	lamps	New	70.98	17	\$64.65	100%	100%	\$25.52	1,110.69	1,046.05	USDOE SSL Projections - 2016
Warehouse	Interior Lighting	High-Bay Lighting	lamps	New	410.76	15	\$6.29	100%	100%	(\$75.34)	7,006.74	6,464.41	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	General Service Lighting	lamps	New	57.28	8	\$1.06	100%	100%	(\$35.38)	10.84	8.58	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Exterior Lighting	Linear Lighting	lamps	New	114.48	17	\$64.65	100%	100%	\$15.83	274.19	258.32	USDOE SSL Projections - 2016
Warehouse	Exterior Lighting	Area Lighting	lamps	New	808.58	15	\$157.49	100%	100%	(\$33.11)	1,324.20	1,227.68	USDOE SSL Projections - 2016
Warehouse	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	1%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	2%	100%	\$279.89	3.67	3.56	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	10%	100%	\$27.96	5.96	5.74	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	10%	100%	\$75.02	1.91	1.85	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	2%	100%	(\$10.69)	1.58	1.52	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	2%	100%	\$52.79	0.90	0.87	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	2%	100%	(\$15.78)	0.91	0.88	DW-Food Preparation-XCELCO-2017-18-1
Warehouse	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	2%	100%	\$69.57	0.83	0.81	COOK_HFCNT-Food Preparation-RTF-v2.3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	2%	100%	(\$33.62)	5.81	5.61	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	14.69	13.91	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.68	0.64	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	1.60	1.51	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	89%	10%	\$0.04	14.31	13.62	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	77%	10%	\$0.02	3.47	3.31	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	50%	100%	\$0.00	0.00	0.00	Standard
Warehouse	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	27.13	20	\$2.19	15%	100%	\$63.78	12.99	12.45	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	49.82	25	\$20.82	2%	100%	\$38.39	2.28	2.19	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	Existing	9.27	15	\$1.02	20%	100%	\$12.40	5.42	5.15	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	Existing	149.00	15	\$210.81	1%	100%	\$160.27	0.41	0.40	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	Existing	149.00	15	\$200.86	0%	100%	\$67.02	0.04	0.04	PTHP-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	2.84	15	\$2.34	2%	100%	\$46.65	0.12	0.12	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	Existing	190.49	15	\$200.86	0%	100%	\$67.02	0.05	0.05	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	2.83	15	\$2.34	2%	100%	\$46.65	0.12	0.12	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	Existing	11,839.5 ₁	20	\$1,330.55	100%	100%	\$10.14	18.88	18.33	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBtu/hr	Existing	1.24	13	\$1.69	53%	100%	(\$437.10)	0.69	0.65	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	Existing	49.84	8	\$1.09	100%	100%	(\$60.98)	2.23	2.04	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	Existing	26.26	8	\$4.71	100%	100%	(\$49.50)	1.10	0.96	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	Existing	70.98	17	\$64.65	100%	100%	\$25.52	20.85	19.25	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	Existing	410.76	15	\$6.29	100%	100%	(\$75.34)	113.73	101.56	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	Existing	57.28	8	\$1.06	100%	100%	(\$35.38)	0.35	0.28	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	Existing	114.48	17	\$64.65	100%	100%	\$15.83	5.16	4.77	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	Existing	808.58	15	\$157.49	100%	100%	(\$33.11)	21.89	19.74	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	6,558.91	10	\$333.83	92%	0%	\$7.09	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	2%	100%	\$279.89	0.52	0.50	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	92%	100%	\$27.96	8.41	7.98	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	92%	100%	\$75.02	2.44	2.35	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	41%	100%	(\$10.69)	0.94	0.89	COOK_OVN-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	41%	100%	\$52.79	0.54	0.52	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	41%	100%	(\$15.78)	0.56	0.53	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	41%	100%	\$69.57	0.41	0.40	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	41%	100%	(\$33.55)	2.97	2.87	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	0.27	0.26	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	0.01	0.01	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	0.04	0.03	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	89%	10%	\$0.04	0.28	0.27	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	77%	10%	\$0.02	0.06	0.06	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Cooling	Air-Cooled Chiller	1 kbtu/h	New	18.41	20	\$2.19	15%	100%	\$11.87	5.92	5.70	AEG BEST
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller	1 kbtu/h	New	32.41	25	\$20.82	2%	100%	\$59.01	1.13	1.09	AEG BEST
Warehouse, Controlled Atm.	Cooling	RTU	1 kBTU/hr	New	6.21	15	\$1.02	20%	100%	\$18.52	2.53	2.43	AEG BEST
Warehouse, Controlled Atm.	Cooling	PTAC	12 kBTU/hr	New	131.22	15	\$210.81	1%	100%	\$181.98	0.26	0.25	PTAC-Cooling-AEG-v2-1
Warehouse, Controlled Atm.	Cooling	PTHP	12 kBTU/hr	New	131.22	15	\$200.86	0%	100%	\$59.61	0.07	0.06	PTHP-Cooling-AEG-v2-1

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Warehouse, Controlled Atm.	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Warehouse, Controlled Atm.	Cooling	Air-Source Heat Pump	1 kbtu/h	New	2.22	15	\$2.34	2%	100%	\$67.56	0.06	0.06	AEG BEST
Warehouse, Controlled Atm.	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	3%	100%	\$0.00	0.00	0.00	Default
Warehouse, Controlled Atm.	Heating	PTHP	12 kBTU/hr	New	177.39	15	\$200.86	0%	100%	\$59.61	0.08	0.08	PTHP-Heating-AEG-v2-1
Warehouse, Controlled Atm.	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.70	15	\$2.34	2%	100%	\$67.56	0.05	0.04	AEG BEST
Warehouse, Controlled Atm.	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$22.89	0%	100%	\$0.00	0.00	0.00	AEG BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation	1000 CFM	New	10,205.54	20	\$1,330.55	100%	100%	\$11.77	15.11	14.66	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	53%	100%	(\$437.10)	0.44	0.42	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	General Service Lighting	lamps	New	49.84	8	\$1.09	100%	100%	(\$60.98)	1.03	0.90	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	Exempted Lighting	lamps	New	26.26	8	\$4.71	100%	100%	(\$49.50)	0.35	0.32	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Interior Lighting	Linear Lighting	lamps	New	70.98	17	\$64.65	100%	100%	\$25.52	12.67	11.93	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Interior Lighting	High-Bay Lighting	lamps	New	410.76	15	\$6.29	100%	100%	(\$75.34)	79.90	73.71	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	General Service Lighting	lamps	New	57.28	8	\$1.06	100%	100%	(\$35.38)	0.12	0.10	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Linear Lighting	lamps	New	114.48	17	\$64.65	100%	100%	\$15.83	3.13	2.95	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Exterior Lighting	Area Lighting	lamps	New	808.58	15	\$157.49	100%	100%	(\$33.11)	15.10	14.00	USDOE SSL Projections - 2016
Warehouse, Controlled Atm.	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	6,558.91	10	\$333.83	92%	0%	\$7.09	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Warehouse, Controlled Atm.	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	2%	100%	\$279.89	0.32	0.31	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	92%	100%	\$27.96	4.73	4.55	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	92%	100%	\$75.02	1.51	1.47	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Warehouse, Controlled Atm.	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	41%	100%	(\$10.69)	0.57	0.55	COOK_OVN-Food Preparation-RTF-v2.3-1

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Warehouse, Controlled Atm.	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	41%	100%	\$52.79	0.33	0.32	COOK_FRY-Food Preparation-RTF-v2.3-1
Warehouse, Controlled Atm.	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	41%	100%	(\$15.78)	0.33	0.32	DW-Food Preparation-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	41%	100%	\$69.57	0.30	0.29	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Warehouse, Controlled Atm.	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	41%	100%	(\$33.62)	2.10	2.03	COOK_STM-Food Preparation-RTF-v2.4-2
Warehouse, Controlled Atm.	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	0.12	0.12	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.01	0.01	CEL_PCLT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	0.01	0.01	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	89%	10%	\$0.04	0.12	0.11	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	77%	10%	\$0.02	0.03	0.03	CEL_PCDT-Office Equipment-7PLN-v3-1
Warehouse, Controlled Atm.	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	79%	100%	\$0.00	0.00	0.00	Standard
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1

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Warehouse, Controlled Atm.	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Warehouse, Controlled Atm.	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Warehouse, Controlled Atm.	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	79.78	20	\$18.63	15%	100%	\$23.27	0.12	0.12	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	104.42	25	\$20.82	9%	100%	\$17.76	0.10	0.09	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	Existing	29.32	15	\$1.02	48%	100%	\$3.92	0.15	0.14	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	Existing	471.14	15	\$210.81	3%	100%	\$50.68	0.01	0.01	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	Existing	471.14	15	\$200.86	1%	100%	\$46.10	0.00	0.00	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	9.00	15	\$2.34	15%	100%	\$51.31	0.04	0.04	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	38.55	25	\$22.89	8%	100%	\$74.89	0.03	0.03	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	Existing	22.36	15	\$200.86	1%	100%	\$46.10	0.00	0.00	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$2.34	15%	100%	\$51.31	0.00	0.00	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.78	25	\$22.89	8%	100%	\$74.89	0.00	0.00	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	Existing	88,363.14	20	\$1,330.55	100%	100%	\$1.36	0.35	0.34	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Water Heater	1 kBtu/hr	Existing	1.24	13	\$1.69	45%	100%	(\$437.10)	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	Existing	73.93	8	\$1.09	100%	100%	(\$47.09)	0.01	0.01	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	Existing	111.85	8	\$4.71	100%	100%	(\$11.62)	0.01	0.01	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Linear Lighting	lamps	Existing	89.39	17	\$64.65	100%	100%	\$20.29	0.20	0.18	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	Existing	545.43	15	\$6.29	100%	100%	(\$56.35)	0.10	0.09	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	Existing	166.19	8	\$1.06	100%	100%	(\$24.94)	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	Existing	100.93	17	\$64.65	100%	100%	\$17.97	0.01	0.01	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	Existing	895.95	15	\$157.49	100%	100%	(\$29.96)	0.05	0.04	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	14%	100%	\$279.89	0.00	0.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	5%	100%	\$27.96	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	5%	100%	\$75.02	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	4%	100%	(\$10.69)	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	4%	100%	\$52.79	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	4%	100%	(\$15.78)	0.00	0.00	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	4%	100%	\$69.57	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	4%	100%	(\$33.55)	0.00	0.00	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	0.02	0.02	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	0.00	0.00	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	100%	10%	\$0.04	0.18	0.17	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	40%	10%	\$0.02	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	Existing	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	Existing	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default
Data Center	Cooling	Air-Cooled Chiller	1 kbtu/h	New	53.41	20	\$18.63	15%	100%	\$34.76	0.06	0.05	AEG BEST
Data Center	Cooling	Water-Cooled Chiller	1 kbtu/h	New	67.92	25	\$20.82	9%	100%	\$27.31	0.05	0.05	AEG BEST
Data Center	Cooling	RTU	1 kBTU/hr	New	19.64	15	\$1.02	48%	100%	\$5.86	0.07	0.07	AEG BEST
Data Center	Cooling	PTAC	12 kBTU/hr	New	1,096.37	15	\$421.63	3%	100%	\$43.56	0.02	0.02	PTAC-Cooling-AEG-v2-1
Data Center	Cooling	PTHP	12 kBTU/hr	New	1,096.37	15	\$401.71	1%	100%	\$39.56	0.01	0.01	PTHP-Cooling-AEG-v2-1
Data Center	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Data Center	Cooling	Air-Source Heat Pump	1 kbtu/h	New	7.02	15	\$2.34	15%	100%	\$63.44	0.02	0.02	AEG BEST
Data Center	Cooling	Geothermal Heat Pump	1 kbtu/h	New	38.55	25	\$22.89	8%	100%	\$74.89	0.02	0.02	AEG BEST
Data Center	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	1%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	22%	100%	\$0.00	0.00	0.00	Default
Data Center	Heating	PTHP	12 kBTU/hr	New	53.78	15	\$401.71	1%	100%	\$39.56	0.00	0.00	PTHP-Heating-AEG-v2-1
Data Center	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.20	15	\$2.34	15%	100%	\$63.44	0.00	0.00	AEG BEST
Data Center	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.78	25	\$22.89	8%	100%	\$74.89	0.00	0.00	AEG BEST
Data Center	Ventilation	Ventilation	1000 CFM	New	76,168.14	20	\$1,330.55	100%	100%	\$1.58	0.33	0.32	AEG-BEST
Data Center	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	45%	100%	(\$437.10)	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	General Service Lighting	lamps	New	73.93	8	\$1.09	100%	100%	(\$47.09)	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Interior Lighting	Exempted Lighting	lamps	New	111.85	8	\$4.71	100%	100%	(\$11.62)	0.00	0.00	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Interior Lighting	Linear Lighting	lamps	New	89.39	17	\$64.65	100%	100%	\$20.29	0.12	0.11	USDOE SSL Projections - 2016
Data Center	Interior Lighting	High-Bay Lighting	lamps	New	545.43	15	\$6.29	100%	100%	(\$56.35)	0.07	0.06	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	General Service Lighting	lamps	New	166.19	8	\$1.06	100%	100%	(\$24.94)	0.00	0.00	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Linear Lighting	lamps	New	100.93	17	\$64.65	100%	100%	\$17.97	0.01	0.01	USDOE SSL Projections - 2016
Data Center	Exterior Lighting	Area Lighting	lamps	New	895.95	15	\$157.49	100%	100%	(\$29.96)	0.03	0.03	USDOE SSL Projections - 2016
Data Center	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	2%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Data Center	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	14%	100%	\$279.89	0.00	0.00	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	5%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	5%	100%	\$27.96	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	5%	100%	\$75.02	0.00	0.00	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Data Center	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	4%	100%	(\$10.69)	0.00	0.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Data Center	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	4%	100%	\$52.79	0.00	0.00	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	4%	100%	(\$15.78)	0.00	0.00	DW-Food Preparation-XCELCO-2017-18-1
Data Center	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	4%	100%	\$69.57	0.00	0.00	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Data Center	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	4%	100%	(\$33.62)	0.00	0.00	COOK_STM-Food Preparation-RTF-v2.4-2
Data Center	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	0.01	0.01	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	0.00	0.00	CEL_PCLT-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	100%	10%	\$0.04	0.08	0.07	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Data Center	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	40%	10%	\$0.02	0.00	0.00	CEL_PCDT-Office Equipment-7PLN-v3-1
Data Center	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	90%	100%	\$0.00	0.00	0.00	Standard
Data Center	Miscellaneous	Pool Pump	1 unit	New	0.00	7	\$234.00	0%	100%	\$0.00	0.00	0.00	CPLPUMP-Miscellaneous-RTF-v2.1-1
Data Center	Miscellaneous	Pool Heater	1 unit	New	0.00	2	\$1.00	0%	100%	\$0.00	0.00	0.00	TBD
Data Center	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	0%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Data Center	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Data Center	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	10.58	20	\$2.19	10%	100%	\$20.65	410.95	393.85	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	9.99	25	\$7.67	5%	100%	\$108.08	239.66	231.06	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	Existing	4.25	15	\$1.02	57%	100%	\$27.07	990.59	941.12	AEG BEST
Miscellaneous	Cooling	PTAC	12 kBTU/hr	Existing	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	Existing	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	5.59	25	\$22.89	1%	100%	\$310.93	11.64	11.30	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	Existing	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	Existing	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	1.59	25	\$22.89	1%	100%	\$310.93	3.31	3.21	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	Existing	3,850.22	20	\$1,330.55	100%	100%	\$31.18	820.01	795.69	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	Existing	1.24	13	\$1.69	53%	100%	(\$437.10)	107.83	102.44	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	Existing	85.49	8	\$1.09	100%	100%	(\$40.25)	520.60	508.61	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Interior Lighting	Exempted Lighting	lamps	Existing	197.73	8	\$4.71	100%	100%	(\$6.51)	516.30	448.41	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	Existing	113.54	17	\$64.65	100%	100%	\$15.96	5,269.13	4,858.70	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	Existing	783.85	15	\$6.29	100%	100%	(\$40.11)	4,582.13	4,103.40	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	Existing	137.95	8	\$1.06	100%	100%	(\$26.95)	60.06	66.85	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	Existing	114.18	17	\$64.65	100%	100%	\$15.87	185.39	170.96	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	Existing	940.06	15	\$157.49	100%	100%	(\$28.55)	1,539.07	1,387.26	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	Existing	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	Existing	463.82	10	\$999.69	12%	100%	\$279.89	25.18	24.17	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	Existing	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	Existing	430.72	9	\$80.91	22%	100%	\$27.96	15.91	15.09	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	Existing	82.09	10	\$44.23	22%	100%	\$75.02	9.15	8.79	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	Existing	15,361.20	10	\$1,104.16	59%	100%	(\$10.69)	94.71	90.00	COOK_OVN-Food Preparation-RTF-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	Existing	2,481.88	8	\$814.12	30%	100%	\$52.79	27.47	26.30	COOK_FRY-Food Preparation-RTF-v2.3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Food Preparation	Dishwasher	1 unit	Existing	2,243.87	10	\$83.55	15%	100%	(\$15.78)	14.79	14.08	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	Existing	1,263.96	20	\$882.04	15%	100%	\$69.57	10.89	10.55	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Miscellaneous	Food Preparation	Steamer	1 unit	Existing	0.00	20	\$142.38	15%	100%	(\$33.55)	78.43	75.85	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	Existing	125.18	5	\$0.01	100%	10%	\$0.02	40.79	37.86	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	Existing	37.35	4	\$0.01	100%	10%	\$0.08	2.40	2.25	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	Existing	31.07	4	\$0.01	100%	10%	\$0.09	5.42	5.03	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	Existing	78.07	4	\$0.01	66%	10%	\$0.04	17.16	16.13	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	Existing	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	Existing	125.18	5	\$0.01	28%	10%	\$0.02	1.62	1.52	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	Existing	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	Existing	150.87	7	\$234.00	4%	100%	\$46.51	1.07	1.02	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	Existing	506.72	2	\$1.00	1%	100%	\$0.71	0.02	0.02	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	Existing	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	Existing	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

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Miscellaneous	Cooling	Air-Cooled Chiller	1 kbtu/h	New	8.94	20	\$2.19	10%	100%	\$24.44	267.42	257.59	AEG BEST
Miscellaneous	Cooling	Water-Cooled Chiller	1 kbtu/h	New	7.94	25	\$7.67	5%	100%	\$94.08	122.21	117.41	AEG BEST
Miscellaneous	Cooling	RTU	1 kBTU/hr	New	3.06	15	\$1.02	57%	100%	\$37.59	561.95	539.57	AEG BEST
Miscellaneous	Cooling	PTAC	12 kBTU/hr	New	0.00	15	\$210.81	5%	100%	\$0.00	0.00	0.00	PTAC-Cooling-AEG-v2-1
Miscellaneous	Cooling	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Cooling-AEG-v2-1
Miscellaneous	Cooling	Evaporative Central AC	1 per TR	New	0.00	15	\$5.34	0%	100%	\$0.00	0.00	0.00	EVAPCAC-Cooling-SCE-R3-3
Miscellaneous	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Cooling	Geothermal Heat Pump	1 kbtu/h	New	5.59	25	\$22.89	1%	100%	\$310.93	10.31	10.01	AEG BEST
Miscellaneous	Heating	Electric Furnace	1 kBTU/hr	New	0.00	15	\$0.00	12%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	Electric Room Heat	1 kBTU/hr	New	0.00	15	\$0.00	15%	100%	\$0.00	0.00	0.00	Default
Miscellaneous	Heating	PTHP	12 kBTU/hr	New	0.00	15	\$200.86	3%	100%	\$0.00	0.00	0.00	PTHP-Heating-AEG-v2-1
Miscellaneous	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.00	15	\$2.34	5%	100%	\$0.00	0.00	0.00	AEG BEST
Miscellaneous	Heating	Geothermal Heat Pump	1 kbtu/h	New	1.59	25	\$22.89	1%	100%	\$310.93	2.93	2.85	AEG BEST
Miscellaneous	Ventilation	Ventilation	1000 CFM	New	3,567.76	20	\$1,330.55	100%	100%	\$1,404.84	829.18	804.45	AEG-BEST
Miscellaneous	Water Heating	Water Heater	1 kBTU/hr	New	1.24	13	\$1.69	53%	100%	(\$437.10)	78.21	75.30	AEG-BEST
Miscellaneous	Interior Lighting	General Service Lighting	lamps	New	85.49	8	\$1.09	100%	100%	(\$40.25)	271.02	243.26	USDOE SSL Projections - 2016

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Miscellaneous	Interior Lighting	Exempted Lighting	lamps	New	197.73	8	\$4.71	100%	100%	(\$6.51)	220.85	197.00	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	Linear Lighting	lamps	New	113.54	17	\$64.65	100%	100%	\$15.96	3,627.35	3,413.10	USDOE SSL Projections - 2016
Miscellaneous	Interior Lighting	High-Bay Lighting	lamps	New	783.85	15	\$6.29	100%	100%	(\$40.11)	3,462.36	3,187.20	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	General Service Lighting	lamps	New	137.95	8	\$1.06	100%	100%	(\$26.95)	23.61	22.24	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Linear Lighting	lamps	New	114.18	17	\$64.65	100%	100%	\$15.87	127.63	120.10	USDOE SSL Projections - 2016
Miscellaneous	Exterior Lighting	Area Lighting	lamps	New	940.06	15	\$157.49	100%	100%	(\$28.55)	1,098.18	1,010.98	USDOE SSL Projections - 2016
Miscellaneous	Refrigeration	Walk-in Refrigerator/Freezer	1 unit	New	0.00	10	\$0.00	10%	100%	\$0.00	0.00	0.00	RFG_WLK-Refrigeration-EIA11-2012 Ref. Case-2
Miscellaneous	Refrigeration	Reach-in Refrigerator/Freezer	1 unit	New	463.82	10	\$999.69	12%	100%	\$279.89	17.65	17.11	RFG_RCH-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Glass Door Display	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Open Display Case	1 unit	New	0.00	10	\$0.00	3%	100%	\$0.00	0.00	0.00	RFG_GDSPL-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Icemaker	1 unit	New	430.72	9	\$80.91	22%	100%	\$27.96	10.16	9.78	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Refrigeration	Vending Machine	1 unit	New	82.09	10	\$44.23	22%	100%	\$75.02	6.50	6.31	ICEMK-Refrigeration-EIA11-2012 Ref. Case-4
Miscellaneous	Food Preparation	Oven	1 unit	New	15,361.20	10	\$1,104.16	59%	100%	(\$10.69)	65.77	63.40	COOK_OVN-Food Preparation-v2.3-1
Miscellaneous	Food Preparation	Fryer	1 unit	New	2,481.88	8	\$814.12	30%	100%	\$52.79	19.02	18.40	COOK_FRY-Food Preparation-RTF-v2.3-1

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Miscellaneous	Food Preparation	Dishwasher	1 unit	New	2,243.87	10	\$83.55	15%	100%	(\$15.78)	9.97	9.61	DW-Food Preparation-XCELCO-2017-18-1
Miscellaneous	Food Preparation	Hot Food Container	1 unit	New	1,263.96	20	\$882.04	15%	100%	\$69.57	9.02	8.77	COOK_HFCNT-Food Preparation-RTF-v2.3-2
Miscellaneous	Food Preparation	Steamer	1 unit	New	45,703.98	20	\$142.38	15%	100%	(\$33.62)	63.03	60.91	COOK_STM-Food Preparation-RTF-v2.4-2
Miscellaneous	Office Equipment	Desktop Computer	1 unit	New	125.18	5	\$0.01	100%	10%	\$0.02	20.52	19.42	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Laptop	1 unit	New	37.35	4	\$0.01	100%	10%	\$0.08	1.19	1.13	CEL_PCLT-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Monitor	1 unit	New	31.07	4	\$0.01	100%	10%	\$0.09	2.25	2.11	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Server	1 unit	New	78.07	4	\$0.01	66%	10%	\$0.04	8.23	7.83	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	Printer/Copier/Fax	1 unit	New	0.00	6	\$0.01	100%	10%	\$0.00	0.00	0.00	CEL_MN-Office Equipment-7PLN-v3-1
Miscellaneous	Office Equipment	POS Terminal	1 unit	New	125.18	5	\$0.01	28%	10%	\$0.02	0.88	0.84	CEL_PCDT-Office Equipment-7PLN-v3-1
Miscellaneous	Miscellaneous	Non-HVAC Motors	1 unit	New	0.00	5	\$0.00	60%	100%	\$0.00	0.00	0.00	Standard
Miscellaneous	Miscellaneous	Pool Pump	1 unit	New	150.87	7	\$234.00	4%	100%	\$46.51	0.75	0.72	CPLPUMP-Miscellaneous-RTF-v2.1-1
Miscellaneous	Miscellaneous	Pool Heater	1 unit	New	506.72	2	\$1.00	1%	100%	\$0.71	0.00	0.00	TBD
Miscellaneous	Miscellaneous	Clothes Washer	1 unit	New	0.00	11	\$0.00	15%	100%	\$0.00	0.00	0.00	CW-Miscellaneous-RTF-v5.1-1
Miscellaneous	Miscellaneous	Clothes Dryer	1 unit	New	0.00	15	\$0.00	10%	100%	\$0.00	0.00	0.00	CDR-Appliances-AEO17-66
Miscellaneous	Miscellaneous	Miscellaneous	1 unit	New	0.00	2	\$0.00	100%	100%	\$0.00	0.00	0.00	Default

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Large Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$0.84	15%	35%	\$67.20	25.88	25.65	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.96	45	\$0.84	15%	35%	\$67.20	100.24	96.88	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$67.20	2.02	2.00	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.24	20	\$0.86	15%	35%	\$375.32	68.72	68.10	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$375.32	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$375.32	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.82	20	\$0.81	45%	50%	\$8,826.81	38.99	38.64	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.48	20	\$0.81	45%	50%	\$8,826.81	-12.57	-12.15	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.33	20	\$0.81	45%	50%	\$8,826.81	-17.19	-17.02	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.44	45	\$1.70	15%	35%	\$72.06	-71.03	-70.39	Building Energy Simulation Tool
Large Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.50	45	\$1.70	15%	35%	\$72.06	133.65	129.17	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	1.03	45	\$1.70	15%	35%	\$72.06	182.77	180.90	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	9.81	18	\$0.59	15%	50%	\$9,999.00	27.96	27.71	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-8.62	18	\$0.59	15%	50%	\$9,999.00	-13.53	-13.08	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-5.94	18	\$0.59	15%	50%	\$9,999.00	-18.50	-18.31	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	10.97	30	\$37.07	48%	48%	\$99.76	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2

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Large Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.60	30	\$37.07	48%	48%	\$99.76	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	6.99	30	\$37.07	48%	48%	\$99.76	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	5,766.52	10	\$914.46	15%	75%	\$23.19	40.03	39.73	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	700.56	15	\$248.07	15%	75%	\$42.12	676.38	671.17	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,490.45	15	\$263.92	15%	75%	\$21.06	143.90	142.79	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	42.18	15	\$248.07	15%	75%	\$716.96	14.82	15.22	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	50,810.73	10	\$1,796.53	15%	75%	\$15.76	128.39	131.83	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	Existing	204.04	5	\$267.96	18%	75%	\$302.40	578.21	563.27	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.56	15	\$0.05	5%	15%	\$10.87	172.36	170.80	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.59	14	\$5.25	3%	75%	\$173.76	399.68	380.74	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.59	18	\$0.26	15%	20%	\$47.67	91.62	90.69	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	768.70	15	\$189.00	13%	25%	\$29.24	112.70	111.51	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	277.00	15	\$1,273.23	13%	50%	\$546.63	127.65	126.31	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.36	15	\$0.10	13%	50%	\$33.02	448.60	443.88	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	22%	30%	\$782.16	9.16	9.06	VENT_DCV-Ventilation-7PLN-v5-5

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Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.95	15	\$0.76	7%	10%	\$39.93	41.95	39.96	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.28	15	\$0.76	7%	10%	\$39.93	112.06	110.88	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,085.00	15	\$7,501.21	15%	30%	\$57.76	244.18	241.97	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,031.74	15	\$7,501.21	15%	30%	\$57.76	199.59	190.14	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	11.90	11.48	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	Existing	321.08	15	\$410.87	15%	45%	\$148.70	398.34	387.62	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	305.21	15	\$698.92	15%	75%	\$266.10	730.26	713.65	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	548.98	20	\$1,370.94	15%	25%	\$155.49	12.00	11.91	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	361.02	20	\$1,370.94	15%	25%	\$155.49	87.62	82.70	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	30%	40%	\$98.09	220.19	218.21	STAT_WIFI-All-7PLN-v2-1
Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$98.09	92.93	89.81	STAT_WIFI-All-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.41	5	\$0.75	30%	40%	\$98.09	127.08	125.78	STAT_WIFI-All-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	144.26	10	\$8.63	25%	65%	\$8.57	22.34	21.47	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	158.51	10	\$17.56	25%	65%	(\$101.09)	12.27	11.79	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	39.28	10	\$16.82	25%	65%	(\$137.15)	3.00	2.88	CDHW_TSRVLV-Water Heating-RTF-v1.3-1

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Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	20%	\$8.17	13.47	13.07	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	555.05	15	\$15.38	16%	75%	\$3.23	52.26	50.22	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	591.23	4	\$75.87	25%	40%	(\$98.13)	33.85	32.53	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	28.41	27.30	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.12	20	\$258.33	1%	30%	\$2,019.97	90.45	86.92	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.40	15	\$0.36	3%	23%	\$109.37	344.44	344.04	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.55	15	\$0.60	3%	23%	\$128.90	482.22	481.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	149.70	15	\$56.14	1%	3%	\$46.70	9.24	9.56	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.28	15	\$65.99	1%	3%	\$154.24	0.40	0.41	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,839.65	11	\$26.48	15%	30%	\$1.32	142.66	142.24	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	290.78	16	\$1,864.95	5%	15%	\$744.91	97.39	97.10	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.64	9	\$0.65	15%	25%	\$63.03	221.51	222.96	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	105.34	8	\$56.85	15%	25%	\$93.33	117.73	118.50	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	131.72	7	\$3,486.31	15%	30%	\$5,024.12	220.82	222.27	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	20.83	12	\$50.74	0%	0%	\$324.78	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	4.62	4	\$24.51	0%	0%	\$1,510.78	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	30.91	15	\$347.21	0%	0%	\$1,338.46	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	27.58	2	\$10.74	0%	0%	\$288.50	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.73	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	12.80	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	97.09	15	\$305.13	0%	0%	\$823.61	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	388.80	15	\$539.09	0%	0%	\$165.22	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	816.88	10	\$449.00	0%	0%	\$80.51	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	46.80	16	\$153.90	0%	0%	\$380.32	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	16.83	15	\$135.00	0%	0%	\$956.99	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	163.11	16	\$105.92	0%	0%	\$85.13	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2

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Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	125.56	10	\$521.11	0%	0%	\$689.91	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	88.45	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	165.50	12	\$605.15	0%	0%	\$490.30	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.30	8	\$15.90	0%	0%	\$288.57	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.96	8	\$3.87	0%	0%	\$681.39	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.37	5	\$49.37	0%	0%	\$3,423.68	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,647.69	5	\$288.64	25%	75%	\$41.04	20.63	20.01	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	6,947.67	18	\$8,815.42	25%	50%	\$138.70	217.72	215.49	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	380.63	15	\$335.00	0%	0%	\$63.08	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	242.42	15	\$335.00	0%	0%	\$63.08	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	118.96	4	\$37.32	10%	50%	\$78.98	390.44	334.09	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.05	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.61	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$18.42	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	8,433.13	18	\$4,231.40	0%	0%	\$54.85	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.84	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	147.71	7	\$423.28	0%	0%	(\$613.16)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$613.16)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$613.16)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	23,208.25	15	\$1,114.41	0%	0%	\$5.60	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$5.60	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6

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Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	8,533.30	6	\$37.07	1%	3%	\$0.85	25.78	24.68	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.05	20	\$0.48	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	Existing	1.08	25	\$4.24	0%	0%	\$99.73	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	Existing	1.13	25	\$4.24	0%	0%	\$99.73	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.24	0%	0%	\$99.73	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$99.73	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.78	25	\$4.24	0%	0%	\$99.73	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.39	25	\$4.24	0%	0%	\$99.73	0.00	0.00	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	Existing	0.24	3	\$0.04	3%	14%	\$13.80	82.16	81.42	COM_SEM-HVAC-AEG-1
Large Office	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.04	3%	14%	\$13.80	34.67	33.03	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.04	3%	14%	\$13.80	47.42	46.92	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.04	3%	14%	\$13.80	7.43	7.14	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.04	3%	14%	\$13.80	46.04	47.33	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.07	3	\$0.04	3%	14%	\$13.80	24.04	24.19	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.04	3%	14%	\$13.80	3.53	3.42	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.16	3	\$0.04	3%	14%	\$13.80	70.31	60.16	COM_SEM-Office Equipment-AEG-1

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Large Office	Cooling	Commissioning	sqft	Existing	0.33	3	\$0.65	0%	0%	\$221.08	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	Existing	0.26	3	\$0.65	0%	0%	\$221.08	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	Existing	0.18	3	\$0.65	0%	0%	\$221.08	0.00	0.00	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.65	0%	0%	\$221.08	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	Existing	0.15	3	\$0.65	0%	0%	\$221.08	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	Existing	0.08	3	\$0.65	0%	0%	\$221.08	0.00	0.00	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.65	0%	0%	\$221.08	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	Existing	0.33	3	\$0.21	11%	59%	\$70.18	496.39	491.91	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.21	11%	59%	\$70.18	209.49	199.57	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.21	11%	59%	\$70.18	286.48	283.47	COM_RCX-HVAC-AEG-1
Large Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.21	11%	59%	\$70.18	14.97	14.39	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.21	11%	59%	\$70.18	231.82	238.30	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.08	3	\$0.21	11%	59%	\$70.18	121.02	121.81	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.21	11%	59%	\$70.18	35.51	34.43	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.11	10	\$0.09	0%	0%	\$126.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.07	10	\$1.12	0%	0%	\$2,472.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.02	3	\$0.24	0%	0%	\$4,889.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	Existing	110.23	16	\$75.53	20%	75%	\$75.24	4.82	4.50	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	11,275.28	25	\$18,394.24	0%	75%	\$163.54	349.03	335.65	WHP Analysis
Large Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$209.02	0.00	0.00	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ceiling	sqft roof	New	0.34	45	\$0.84	15%	50%	\$209.02	20.88	20.27	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$209.02	0.67	0.65	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Ducting	sqft duct	New	0.31	20	\$0.86	15%	50%	\$276.29	54.74	53.16	Building Energy Simulation Tool
Large Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$276.29	0.00	0.00	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$276.29	0.00	0.00	Building Energy Simulation Tool
Large Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.81	45%	50%	\$9,999.00	1.83	1.78	Building Energy Simulation Tool
Large Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.18	20	\$0.81	45%	50%	\$9,999.00	-1.53	-1.48	Building Energy Simulation Tool
Large Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.11	20	\$0.81	45%	50%	\$9,999.00	-2.06	-2.00	Building Energy Simulation Tool
Large Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$277.31	-0.64	-0.62	Building Energy Simulation Tool

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Large Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.33	45	\$1.70	15%	50%	\$277.31	17.00	16.50	Building Energy Simulation Tool
Large Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.21	45	\$1.70	15%	50%	\$277.31	22.89	22.20	Building Energy Simulation Tool
Large Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	22.07	18	\$0.59	15%	35%	\$1.57	12.23	11.87	Building Energy Simulation Tool
Large Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	10.41	18	\$0.59	15%	35%	\$1.57	3.01	2.92	Building Energy Simulation Tool
Large Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.64	18	\$0.59	15%	35%	\$1.57	4.05	3.93	Building Energy Simulation Tool
Large Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.57	30	\$37.07	66%	66%	\$114.18	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Office	Heating	Windows - High Efficiency Glazing	sqft window	New	16.58	30	\$37.07	66%	66%	\$114.18	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.09	30	\$37.07	66%	66%	\$114.18	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	4,389.91	10	\$914.46	15%	75%	\$29.00	4.78	4.49	AEG-BEST
Large Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	533.32	15	\$248.07	15%	75%	\$52.69	100.61	95.07	AEG-BEST
Large Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,134.64	15	\$263.92	15%	75%	\$26.35	21.40	20.23	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	40.46	15	\$248.07	15%	75%	\$694.51	2.91	2.75	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	34,937.39	10	\$1,796.53	15%	75%	\$21.30	14.51	13.63	AEG-BEST
Large Office	Cooling	HVAC - Economizer	HP cool	New	138.31	5	\$267.96	18%	75%	\$434.81	35.11	32.88	AEG-BEST
Large Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.38	15	\$0.05	10%	15%	\$15.10	11.50	10.90	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	3.38	14	\$5.25	6%	75%	\$182.78	64.17	60.66	RES_HRV-Cooling-7PLN-v1-2

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Large Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.51	18	\$0.26	15%	20%	\$52.70	27.06	26.22	RES_HRV-Cooling-7PLN-v1-2
Large Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	702.33	15	\$189.00	19%	25%	\$30.46	8.99	8.49	VENT_PMSM-Ventilation-AEG-2016-2
Large Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	253.09	15	\$1,273.23	19%	50%	\$569.52	17.86	16.87	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.09	19%	50%	\$34.41	62.76	59.29	AEG-BEST
Large Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	22%	30%	\$864.71	1.54	1.45	VENT_DCV-Ventilation-7PLN-v5-5
Large Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.99	15	\$0.70	7%	10%	\$51.46	8.01	7.58	HVAC_DOAS-Heating-7PLN-v5-25
Large Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.70	7%	10%	\$51.46	9.51	8.99	HVAC_DOAS-Heating-7PLN-v5-1
Large Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,199.63	15	\$7,501.21	15%	30%	\$67.19	32.60	30.89	HVLS-Cooling-AEG-1
Large Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,504.92	15	\$7,501.21	15%	30%	\$67.19	34.43	32.58	HVLS-Heating-AEG-1
Large Office	Cooling	RTU - Maintenance	tonCool	New	5.55	3	\$33.20	15%	45%	\$2,039.23	0.32	0.30	RTU_MNT-Cooling-PGE-R2-1
Large Office	Cooling	RTU - Advanced Controls	tonCool	New	203.53	15	\$410.87	15%	45%	\$231.30	78.40	75.44	RTU_CTRL-Cooling-RTF-1.1-1
Large Office	Cooling	RTU - Evaporative Precooler	tonCool	New	193.47	15	\$698.92	15%	75%	\$413.92	174.74	169.52	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	436.44	20	\$1,370.94	15%	25%	\$167.23	2.39	2.27	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	380.82	20	\$1,370.94	15%	25%	\$167.23	21.10	20.05	DHP-Cooling/Heating-7PLN-v2-1
Large Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.53	5	\$0.75	30%	40%	\$116.35	16.68	15.88	STAT_WIFI-All-7PLN-v2-1

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Large Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.56	5	\$0.75	30%	40%	\$116.35	9.10	8.65	STAT_WIFI-AII-7PLN-v2-1
Large Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.36	5	\$0.75	30%	40%	\$116.35	12.25	11.63	STAT_WIFI-AII-7PLN-v2-1
Large Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	45.76	10	\$8.63	25%	65%	\$26.26	2.68	2.51	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	50.28	10	\$17.56	25%	65%	(\$309.62)	1.47	1.38	DHW_SHW-Water Heating-RTF-v3.1-4
Large Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	12.46	10	\$16.82	25%	65%	(\$420.03)	0.43	0.40	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	15%	20%	\$8.34	3.24	3.13	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	528.17	15	\$15.38	1%	75%	\$3.30	11.65	11.00	AEG-BEST
Large Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	187.53	4	\$75.87	25%	40%	(\$300.54)	2.37	2.21	DHW_SPR-Water Heating-RTF-v2.4-1
Large Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	1.06	0.98	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Office	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,062.15	16.56	15.67	AEG-BEST
Large Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.37	15	\$0.36	11%	23%	\$113.07	127.21	124.69	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.51	15	\$0.60	11%	23%	\$133.26	178.09	174.56	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	138.01	15	\$56.14	1%	3%	\$48.28	1.39	1.36	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	0.00	15	\$65.99	1%	3%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Large Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,617.37	11	\$26.48	15%	30%	\$1.37	21.67	20.75	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	268.01	16	\$1,864.95	5%	15%	\$769.72	17.80	17.11	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.51	9	\$0.65	15%	25%	\$65.61	29.39	28.18	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fict	New	96.85	8	\$56.85	15%	25%	\$97.15	14.43	13.83	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fict	New	121.10	7	\$3,486.31	15%	30%	\$5,229.87	24.50	23.45	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	19.52	12	\$50.74	0%	0%	\$331.28	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.33	4	\$24.51	0%	0%	\$1,542.05	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	29.08	15	\$347.21	0%	0%	\$1,357.71	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	23.19	2	\$10.74	0%	0%	\$339.43	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.69	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Large Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.04	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Large Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	91.32	15	\$305.13	0%	0%	\$835.45	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

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Large Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	365.72	15	\$539.09	0%	0%	\$167.60	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	768.39	10	\$449.00	0%	0%	\$81.67	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	43.97	16	\$153.90	0%	0%	\$386.15	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	15.81	15	\$135.00	0%	0%	\$971.67	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	147.95	16	\$105.92	0%	0%	\$89.70	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	113.89	10	\$521.11	0%	0%	\$726.96	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Large Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.66	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	155.67	12	\$5,648.09	0%	0%	\$4,641.92	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.75	8	\$15.90	0%	0%	\$292.59	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.90	8	\$3.87	0%	0%	\$690.89	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.15	5	\$49.37	0%	0%	\$3,496.78	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,531.55	5	\$288.64	25%	75%	\$41.99	1.76	1.64	VEND_CTRL-Miscellaneous-SCE-17R0-41

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Large Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	5,982.26	18	\$8,815.42	25%	50%	\$153.34	64.29	62.32	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	304.75	15	\$335.00	0%	0%	\$67.54	0.00	0.00	AEG - BEST
Large Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	257.10	15	\$335.00	0%	0%	\$67.54	0.00	0.00	AEG - BEST
Large Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	116.50	4	\$37.32	10%	50%	\$80.17	26.99	22.88	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.05	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$9.25	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	7,261.31	18	\$4,231.40	0%	0%	\$60.64	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$63,022.06	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

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Large Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.76	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	140.56	7	\$423.28	0%	0%	(\$625.96)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$625.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$625.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	22,084.19	15	\$1,114.41	0%	0%	\$5.72	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$5.72	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,831.79	6	\$37.07	1%	3%	\$2.56	3.92	3.76	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.05	20	\$0.43	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Office	Cooling	Advanced New Construction Designs	sqft	New	1.07	25	\$4.24	10%	30%	\$96.01	165.88	161.42	ADVNC-AII-RSRCH-1
Large Office	Heating	Advanced New Construction Designs	sqft	New	1.12	25	\$4.24	10%	30%	\$96.01	90.46	87.99	ADVNC-AII-RSRCH-1
Large Office	Ventilation	Advanced New Construction Designs	sqft	New	0.72	25	\$4.24	10%	30%	\$96.01	121.84	118.45	ADVNC-AII-RSRCH-1
Large Office	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$96.01	20.22	19.66	ADVNC-AII-RSRCH-1
Large Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.79	25	\$4.24	10%	30%	\$96.01	497.79	491.74	ADVNC-AII-RSRCH-1
Large Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.40	25	\$4.24	10%	30%	\$96.01	193.59	189.87	ADVNC-AII-RSRCH-1
Large Office	Cooling	Strategic Energy Management	sqft	New	0.17	3	\$0.03	3%	14%	\$11.50	3.35	3.13	COM_SEM-HVAC-AEG-1

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Large Office	Heating	Strategic Energy Management	sqft	New	0.17	3	\$0.03	3%	14%	\$11.50	1.83	1.70	COM_SEM-HVAC-AEG-1
Large Office	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.03	3%	14%	\$11.50	2.46	2.28	COM_SEM-HVAC-AEG-1
Large Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.03	3%	14%	\$11.50	0.41	0.38	COM_SEM-Water Heating-AEG-1
Large Office	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.03	3%	14%	\$11.50	2.51	2.45	COM_SEM-Lighting-AEG-1
Large Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$0.03	3%	14%	\$11.50	1.30	1.24	COM_SEM-Lighting-AEG-1
Large Office	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.03	3%	14%	\$11.50	0.19	0.18	COM_SEM-Refrigeration-AEG-1
Large Office	Office Equipment	Strategic Energy Management	sqft	New	0.15	3	\$0.03	3%	14%	\$11.50	3.78	3.19	COM_SEM-Office Equipment-AEG-1
Large Office	Cooling	Commissioning	sqft	New	0.23	3	\$0.46	11%	59%	\$178.32	128.10	123.38	COM_CX-HVAC-AEG-1
Large Office	Heating	Commissioning	sqft	New	0.24	3	\$0.46	11%	59%	\$178.32	69.86	67.22	COM_CX-HVAC-AEG-1
Large Office	Ventilation	Commissioning	sqft	New	0.15	3	\$0.46	11%	59%	\$178.32	94.09	90.46	COM_CX-HVAC-AEG-1
Large Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.46	11%	59%	\$178.32	5.20	5.00	COM_CX-Water Heating-AEG-1
Large Office	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.46	11%	59%	\$178.32	320.35	315.39	COM_CX-Lighting-AEG-1
Large Office	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$0.46	11%	59%	\$178.32	124.59	121.35	COM_CX-Lighting-AEG-1
Large Office	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.46	11%	59%	\$178.32	32.23	31.01	COM_CX-Refrigeration-AEG-1
Large Office	Cooling	Retrocommissioning	sqft	New	0.23	3	\$0.15	0%	0%	\$56.60	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Heating	Retrocommissioning	sqft	New	0.24	3	\$0.15	0%	0%	\$56.60	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Office	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.15	0%	0%	\$56.60	0.00	0.00	COM_RCX-HVAC-AEG-1

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Large Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.15	0%	0%	\$56.60	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Office	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.15	0%	0%	\$56.60	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$0.15	0%	0%	\$56.60	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Office	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.15	0%	0%	\$56.60	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$130.39	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.06	10	\$1.12	0%	0%	\$2,508.54	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.02	3	\$0.24	0%	0%	\$4,959.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Office	Miscellaneous	LED Signage	perBldg	New	109.74	16	\$75.53	20%	75%	\$75.58	0.76	0.72	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	11,965.40	25	\$18,245.08	0%	75%	\$148.57	124.39	120.68	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	Existing	0.19	45	\$0.84	15%	35%	\$127.69	400.17	395.98	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	Existing	0.38	45	\$0.84	15%	35%	\$127.69	370.48	360.74	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$127.69	61.73	59.81	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	Existing	0.41	20	\$0.86	15%	35%	\$219.75	221.79	219.48	Building Energy Simulation Tool

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Small Office	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$219.75	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$219.75	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.60	20	\$0.81	45%	50%	\$298.46	324.10	320.71	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$298.46	-61.75	-60.12	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$298.46	-36.80	-35.65	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.31	45	\$1.70	15%	35%	\$108.03	-243.94	-241.39	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.37	45	\$1.70	15%	35%	\$108.03	493.97	480.98	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.32	45	\$1.70	15%	35%	\$108.03	294.38	285.23	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.42	18	\$0.59	15%	50%	\$9,999.00	69.27	68.55	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-9.51	18	\$0.59	15%	50%	\$9,999.00	-46.56	-45.34	Building Energy Simulation Tool
Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.22	18	\$0.59	15%	50%	\$9,999.00	-27.75	-26.89	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	9.19	30	\$37.07	48%	48%	\$128.95	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	Existing	16.15	30	\$37.07	48%	48%	\$128.95	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.18	30	\$37.07	48%	48%	\$128.95	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	Existing	221.82	5	\$267.96	18%	75%	\$276.10	2,402.35	2,320.50	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.60	15	\$0.05	5%	15%	\$10.03	705.57	697.63	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	4.26	14	\$5.25	3%	75%	\$148.22	1,477.16	1,423.76	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.24	18	\$0.26	15%	20%	\$115.15	147.57	142.99	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	304.21	15	\$189.00	13%	25%	\$71.75	181.52	173.74	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	109.62	15	\$1,273.23	13%	25%	\$1,341.38	65.41	62.61	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.15	15	\$0.10	13%	25%	\$81.03	229.87	220.02	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	2%	56%	\$1,889.41	102.52	98.12	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.13	15	\$0.76	1%	19%	\$53.69	1,077.37	1,038.41	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.51	15	\$0.76	1%	19%	\$53.69	1,254.26	1,200.51	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,578.00	15	\$7,501.21	15%	15%	\$50.79	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,699.64	15	\$7,501.21	15%	15%	\$50.79	0.00	0.00	HVLS-Heating-AEG-1

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Small Office	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	67.31	64.95	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	Existing	343.07	15	\$410.87	15%	45%	\$139.17	2,407.36	2,342.60	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	Existing	326.12	15	\$698.92	15%	75%	\$249.04	4,413.34	4,312.97	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	574.59	20	\$1,370.94	15%	75%	\$142.93	262.93	272.77	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	438.96	20	\$1,370.94	15%	75%	\$142.93	1,683.14	1,588.59	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.83	5	\$0.75	30%	40%	\$102.03	901.36	891.93	STAT_WIFI-All-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.70	5	\$0.75	30%	40%	\$102.03	343.44	334.42	STAT_WIFI-All-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.16	5	\$0.75	30%	40%	\$102.03	204.68	198.32	STAT_WIFI-All-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	25.58	10	\$8.63	25%	65%	\$48.35	100.36	96.43	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	28.11	10	\$17.56	25%	65%	(\$570.07)	55.14	52.98	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	6.97	10	\$16.82	25%	65%	(\$773.37)	13.47	12.95	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	0%	0%	\$8.17	0.00	0.00	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	98.59	15	\$15.38	16%	75%	\$18.19	235.18	226.00	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	104.85	4	\$75.87	25%	40%	(\$553.36)	152.08	146.15	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	127.62	122.64	DHW_STBK-Water Heating-ILTRM-v4.0-4

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Small Office	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.13	20	\$258.33	1%	30%	\$2,018.82	406.58	390.72	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.44	15	\$0.36	3%	23%	\$98.04	1,465.31	1,464.12	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.62	15	\$0.60	3%	23%	\$115.55	2,051.44	2,049.76	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	99.89	15	\$56.14	1%	3%	\$69.82	39.29	40.64	CLTG_EXITLEC-Interior Lighting-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.30	15	\$65.99	1%	3%	\$153.81	2.57	2.66	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,538.19	11	\$26.48	15%	30%	\$1.47	491.68	485.37	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	259.91	16	\$1,864.95	5%	15%	\$830.45	335.65	331.34	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	3.70	9	\$0.65	15%	25%	\$28.05	985.18	989.68	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	130.82	8	\$56.85	15%	25%	\$75.32	523.63	526.02	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	163.58	7	\$3,486.31	15%	30%	\$4,054.70	982.12	986.61	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	0.00	12	\$50.74	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	3.94	4	\$24.51	0%	0%	\$1,723.94	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	11.69	15	\$347.21	0%	0%	\$3,517.99	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	0.00	2	\$10.74	0%	0%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.28	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	4.84	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	36.73	15	\$305.13	0%	0%	\$2,164.76	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	147.08	15	\$539.09	0%	0%	\$434.26	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	309.01	10	\$449.00	0%	0%	\$211.61	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	107.66	16	\$105.92	0%	0%	\$113.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	82.88	10	\$521.11	0%	0%	\$915.74	0.00	0.00	RFG_DDEF-Refrigeration-VITRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	0.00	8	\$18,135.52	0%	0%	\$0.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	62.60	12	\$605.15	0%	0%	\$1,288.69	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	0.00	5	\$49.37	0%	0%	\$0.00	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,780.69	5	\$288.64	25%	75%	\$37.98	22.48	21.80	VEND_CTRL-Miscellaneous-SCE-17R0-42
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,793.09	18	\$8,815.42	25%	50%	\$335.05	350.66	339.77	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	398.39	15	\$335.00	0%	0%	\$58.18	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	294.03	15	\$335.00	0%	0%	\$58.18	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	73.89	4	\$37.32	10%	50%	\$124.19	966.15	800.85	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Office	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.08	5	\$0.01	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$1.78	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.78	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$1.78	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$14.26	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	678.05	18	\$4,231.40	0%	0%	\$662.47	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.82	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	26.19	7	\$423.28	0%	0%	(\$3,457.60)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$3,457.60)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$3,457.60)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	4,115.66	15	\$1,114.41	0%	0%	\$276.85	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$276.85	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,342.50	6	\$37.07	1%	3%	\$5.39	77.35	74.07	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.04	20	\$0.36	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	Existing	1.06	25	\$4.24	0%	0%	\$101.65	0.00	0.00	ADVNC-All-RSRCH-1

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Small Office	Heating	Advanced New Construction Designs	sqft	Existing	1.36	25	\$4.24	0%	0%	\$101.65	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$101.65	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$101.65	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.87	25	\$4.24	0%	0%	\$101.65	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.46	25	\$4.24	0%	0%	\$101.65	0.00	0.00	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	Existing	0.26	3	\$0.03	3%	14%	\$12.81	336.32	332.54	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	Existing	0.22	3	\$0.03	3%	14%	\$12.81	128.15	123.51	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.03	3%	14%	\$12.81	76.37	73.10	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.03	3%	14%	\$12.81	33.39	32.09	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	Existing	0.15	3	\$0.03	3%	14%	\$12.81	195.87	201.19	COM_SEM-Lighting-AEG-1
Small Office	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.03	3%	14%	\$12.81	106.90	107.39	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.03	3%	14%	\$12.81	1.87	1.80	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	Existing	0.10	3	\$0.03	3%	14%	\$12.81	173.98	144.21	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	Existing	0.36	3	\$0.64	0%	0%	\$223.79	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	Existing	0.30	3	\$0.64	0%	0%	\$223.79	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.64	0%	0%	\$223.79	0.00	0.00	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.64	0%	0%	\$223.79	0.00	0.00	COM_CX-Water Heating-AEG-1

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Small Office	Interior Lighting	Commissioning	sqft	Existing	0.17	3	\$0.64	0%	0%	\$223.79	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.64	0%	0%	\$223.79	0.00	0.00	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.64	0%	0%	\$223.79	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	Existing	0.36	3	\$0.20	11%	59%	\$71.04	2,032.03	2,009.18	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.20	11%	59%	\$71.04	774.27	746.27	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.20	11%	59%	\$71.04	461.42	441.65	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.20	11%	59%	\$71.04	67.26	64.63	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	Existing	0.17	3	\$0.20	11%	59%	\$71.04	986.20	1,012.99	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.20	11%	59%	\$71.04	538.25	540.71	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.20	11%	59%	\$71.04	18.84	18.13	COM_RCX-Refrigeration-AEG-1
Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.12	10	\$0.09	0%	0%	\$113.14	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Small Office	Miscellaneous	LED Signage	perBldg	Existing	108.14	16	\$75.53	20%	75%	\$76.69	90.16	84.27	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,374.01	25	\$3,872.91	0%	75%	\$163.54	343.83	330.65	WHP Analysis
Small Office	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$247.96	0.00	0.00	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ceiling	sqft roof	New	0.29	45	\$0.84	15%	50%	\$247.96	169.12	164.19	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$247.96	2.51	2.43	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Ducting	sqft duct	New	0.55	20	\$0.86	15%	50%	\$159.04	179.19	174.16	Building Energy Simulation Tool
Small Office	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$159.04	0.00	0.00	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$159.04	0.00	0.00	Building Energy Simulation Tool
Small Office	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.11	20	\$0.81	45%	50%	\$9,999.00	20.05	19.49	Building Energy Simulation Tool
Small Office	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.12	20	\$0.81	45%	50%	\$9,999.00	-9.74	-9.46	Building Energy Simulation Tool
Small Office	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.81	45%	50%	\$9,999.00	-5.27	-5.12	Building Energy Simulation Tool
Small Office	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$2,800.30	-10.08	-9.80	Building Energy Simulation Tool
Small Office	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$2,800.30	12.84	12.46	Building Energy Simulation Tool
Small Office	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$2,800.30	6.95	6.74	Building Energy Simulation Tool
Small Office	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	25.43	18	\$0.59	15%	35%	\$1.06	52.85	51.33	Building Energy Simulation Tool
Small Office	Heating	HVAC - Duct Repair and Sealing	tonCool	New	27.16	18	\$0.59	15%	35%	\$1.06	24.86	24.12	Building Energy Simulation Tool

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Small Office	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	5.79	18	\$0.59	15%	35%	\$1.06	13.46	13.05	Building Energy Simulation Tool
Small Office	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.73	30	\$37.07	66%	66%	\$150.56	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Office	Heating	Windows - High Efficiency Glazing	sqft window	New	15.38	30	\$37.07	66%	66%	\$150.56	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Office	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.89	30	\$37.07	66%	66%	\$150.56	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Office	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Office	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Office	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Office	Cooling	HVAC - Economizer	HP cool	New	133.64	5	\$267.96	18%	75%	\$451.87	127.35	119.57	AEG-BEST
Small Office	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.37	15	\$0.05	10%	15%	\$15.52	42.18	40.05	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Office	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.05	14	\$5.25	6%	75%	\$152.87	243.46	230.27	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.20	18	\$0.26	15%	20%	\$131.49	41.36	40.09	RES_HRV-Cooling-7PLN-v1-2
Small Office	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	280.70	15	\$189.00	19%	25%	\$76.29	13.74	12.99	VENT_PMSM-Ventilation-AEG-2016-2
Small Office	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	101.15	15	\$1,273.23	19%	25%	\$1,426.20	4.95	4.68	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Small Office	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.12	15	\$0.09	19%	25%	\$86.16	17.41	16.45	AEG-BEST
Small Office	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	2%	56%	\$2,157.50	16.34	15.44	VENT_DCV-Ventilation-7PLN-v5-5
Small Office	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.19	15	\$0.76	1%	19%	\$61.36	211.20	199.96	HVAC_DOAS-Heating-7PLN-v5-25
Small Office	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.22	15	\$0.76	1%	19%	\$61.36	101.05	95.49	HVAC_DOAS-Heating-7PLN-v5-1
Small Office	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,104.55	15	\$7,501.21	15%	15%	\$59.88	0.00	0.00	HVLS-Cooling-AEG-1
Small Office	Heating	Destratification Fans (HVLS)	Strat Fan	New	10,184.81	15	\$7,501.21	15%	15%	\$59.88	0.00	0.00	HVLS-Heating-AEG-1
Small Office	Cooling	RTU - Maintenance	tonCool	New	5.23	3	\$33.20	15%	45%	\$2,160.87	1.72	1.60	RTU_MNT-Cooling-PGE-R2-1
Small Office	Cooling	RTU - Advanced Controls	tonCool	New	205.23	15	\$410.87	15%	45%	\$229.38	447.16	430.27	RTU_CTRL-Cooling-RTF-1.1-1
Small Office	Cooling	RTU - Evaporative Precooler	tonCool	New	195.08	15	\$698.92	15%	75%	\$410.49	996.60	966.81	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Office	Cooling	Ductless Mini Split Heat Pump	tonCool	New	414.52	20	\$1,370.94	15%	75%	\$152.20	51.44	48.86	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Heating	Ductless Mini Split Heat Pump	tonCool	New	483.41	20	\$1,370.94	15%	75%	\$152.20	423.24	402.00	DHP-Cooling/Heating-7PLN-v2-1
Small Office	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.52	5	\$0.75	30%	40%	\$126.85	61.15	58.33	STAT_WIFI-AII-7PLN-v2-1
Small Office	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.67	5	\$0.75	30%	40%	\$126.85	34.51	32.83	STAT_WIFI-AII-7PLN-v2-1
Small Office	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	30%	40%	\$126.85	18.68	17.75	STAT_WIFI-AII-7PLN-v2-1
Small Office	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	24.34	10	\$8.63	25%	65%	\$49.36	12.04	11.27	DHW_AER-Water Heating-ILTRM-v4.0-1

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Small Office	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	26.75	10	\$17.56	25%	65%	(\$581.98)	6.62	6.19	DHW_SHW-Water Heating-RTF-v3.1-4
Small Office	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	6.63	10	\$16.82	25%	65%	(\$789.52)	1.93	1.81	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Office	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	0%	0%	\$8.34	0.00	0.00	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Small Office	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	93.82	15	\$15.38	1%	75%	\$18.57	52.40	49.52	AEG-BEST
Small Office	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	99.77	4	\$75.87	25%	40%	(\$564.91)	10.66	9.92	DHW_SPR-Water Heating-RTF-v2.4-1
Small Office	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	4.77	4.42	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Office	Water Heating	Water Heater - Solar System	DHW kWh	New	12.50	20	\$258.33	1%	30%	\$2,060.97	74.45	70.42	AEG-BEST
Small Office	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.41	15	\$0.36	11%	23%	\$101.77	539.37	528.43	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.57	15	\$0.60	11%	23%	\$119.95	755.11	739.80	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Office	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	91.88	15	\$56.14	1%	3%	\$72.40	5.90	5.78	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.51	15	\$65.99	1%	3%	\$146.14	0.39	0.38	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Office	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Office	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,339.51	11	\$26.48	15%	30%	\$1.52	74.79	70.83	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Office	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	239.56	16	\$1,864.95	5%	15%	\$857.30	61.43	58.47	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Small Office	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	3.40	9	\$0.65	15%	25%	\$29.21	130.79	124.90	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Office	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	120.10	8	\$56.85	15%	25%	\$78.43	64.24	61.29	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Office	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	150.17	7	\$3,486.31	15%	30%	\$4,221.82	109.03	103.94	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Office	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	0.00	12	\$50.74	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	3.72	4	\$24.51	0%	0%	\$1,746.02	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Office	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.06	15	\$347.21	0%	0%	\$3,555.93	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Office	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	0.00	2	\$10.74	0%	0%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.26	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Small Office	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.58	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Small Office	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	34.74	15	\$305.13	0%	0%	\$2,188.11	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Office	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	139.12	15	\$539.09	0%	0%	\$438.95	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	292.29	10	\$449.00	0%	0%	\$213.89	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Office	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	0.00	16	\$153.90	0%	0%	\$0.00	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

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Small Office	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	0.00	15	\$135.00	0%	0%	\$0.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Office	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	101.63	16	\$105.92	0%	0%	\$114.44	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Office	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	78.23	10	\$521.11	0%	0%	\$927.47	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Small Office	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	0.00	8	\$647.70	0%	0%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Office	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	59.22	12	\$5,648.09	0%	0%	\$9,999.00	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Office	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	0.00	8	\$15.90	0%	0%	\$0.00	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Office	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.00	8	\$3.87	0%	0%	\$0.00	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Office	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	0.00	5	\$49.37	0%	0%	\$0.00	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Office	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,655.17	5	\$288.64	25%	75%	\$38.85	1.92	1.79	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Office	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,399.70	18	\$8,815.42	25%	50%	\$382.59	98.28	95.27	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Office	Cooling	Lodging - Guest Room Controls	LodgUnit	New	289.45	15	\$335.00	0%	0%	\$61.85	0.00	0.00	AEG - BEST
Small Office	Heating	Lodging - Guest Room Controls	LodgUnit	New	324.12	15	\$335.00	0%	0%	\$61.85	0.00	0.00	AEG - BEST
Small Office	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	72.11	4	\$37.32	10%	50%	\$127.75	65.37	54.27	SMARTSTRIP-Electronics-RTF-v3.2-1

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Small Office	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Office	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.08	5	\$0.01	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$1.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$6.24	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Office	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	582.55	18	\$4,231.40	0%	0%	\$756.47	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Office	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Office	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Office	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$12,604.41	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Office	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.74	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Office	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	24.93	7	\$423.28	0%	0%	(\$3,529.79)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$3,529.79)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Office	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$3,529.79)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Small Office	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	3,916.32	15	\$1,114.41	0%	0%	\$282.63	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$282.63	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Office	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,336.54	6	\$37.07	1%	3%	\$5.42	11.77	11.30	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Office	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.04	20	\$0.32	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Office	Cooling	Advanced New Construction Designs	sqft	New	1.05	25	\$4.24	10%	25%	\$98.85	456.14	444.16	ADVNC-AII-RSRCH-1
Small Office	Heating	Advanced New Construction Designs	sqft	New	1.34	25	\$4.24	10%	25%	\$98.85	257.39	250.40	ADVNC-AII-RSRCH-1
Small Office	Ventilation	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$98.85	139.33	135.47	ADVNC-AII-RSRCH-1
Small Office	Water Heating	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$98.85	68.12	66.23	ADVNC-AII-RSRCH-1
Small Office	Interior Lighting	Advanced New Construction Designs	sqft	New	0.87	25	\$4.24	10%	25%	\$98.85	1,583.57	1,563.66	ADVNC-AII-RSRCH-1
Small Office	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.46	25	\$4.24	10%	25%	\$98.85	646.21	632.44	ADVNC-AII-RSRCH-1
Small Office	Cooling	Strategic Energy Management	sqft	New	0.16	3	\$0.02	3%	14%	\$10.55	12.28	11.50	COM_SEM-HVAC-AEG-1
Small Office	Heating	Strategic Energy Management	sqft	New	0.21	3	\$0.02	3%	14%	\$10.55	6.93	6.46	COM_SEM-HVAC-AEG-1
Small Office	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.02	3%	14%	\$10.55	3.75	3.48	COM_SEM-HVAC-AEG-1
Small Office	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.02	3%	14%	\$10.55	1.83	1.70	COM_SEM-Water Heating-AEG-1
Small Office	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.02	3%	14%	\$10.55	10.66	10.40	COM_SEM-Lighting-AEG-1

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Small Office	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.02	3%	14%	\$10.55	5.80	5.51	COM_SEM-Lighting-AEG-1
Small Office	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.02	3%	14%	\$10.55	0.10	0.10	COM_SEM-Refrigeration-AEG-1
Small Office	Office Equipment	Strategic Energy Management	sqft	New	0.09	3	\$0.02	3%	14%	\$10.55	9.15	7.57	COM_SEM-Office Equipment-AEG-1
Small Office	Cooling	Commissioning	sqft	New	0.22	3	\$0.44	11%	59%	\$179.62	469.68	452.89	COM_CX-HVAC-AEG-1
Small Office	Heating	Commissioning	sqft	New	0.29	3	\$0.44	11%	59%	\$179.62	265.03	255.13	COM_CX-HVAC-AEG-1
Small Office	Ventilation	Commissioning	sqft	New	0.06	3	\$0.44	11%	59%	\$179.62	143.47	137.96	COM_CX-HVAC-AEG-1
Small Office	Water Heating	Commissioning	sqft	New	0.02	3	\$0.44	11%	59%	\$179.62	23.38	22.48	COM_CX-Water Heating-AEG-1
Small Office	Interior Lighting	Commissioning	sqft	New	0.16	3	\$0.44	11%	59%	\$179.62	1,358.81	1,337.25	COM_CX-Lighting-AEG-1
Small Office	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$0.44	11%	59%	\$179.62	554.49	538.61	COM_CX-Lighting-AEG-1
Small Office	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.44	11%	59%	\$179.62	1.25	1.20	COM_CX-Refrigeration-AEG-1
Small Office	Cooling	Retrocommissioning	sqft	New	0.22	3	\$0.14	0%	0%	\$57.01	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Heating	Retrocommissioning	sqft	New	0.29	3	\$0.14	0%	0%	\$57.01	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.14	0%	0%	\$57.01	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Office	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.14	0%	0%	\$57.01	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Office	Interior Lighting	Retrocommissioning	sqft	New	0.16	3	\$0.14	0%	0%	\$57.01	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.14	0%	0%	\$57.01	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Office	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.14	0%	0%	\$57.01	0.00	0.00	COM_RCX-Refrigeration-AEG-1

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Small Office	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.11	10	\$0.09	0%	0%	\$117.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Office	Miscellaneous	LED Signage	perBldg	New	107.66	16	\$75.53	20%	75%	\$77.03	14.19	13.40	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Office	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,548.89	25	\$3,886.60	0%	75%	\$148.57	123.98	120.27	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$76.04	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.96	45	\$0.84	15%	35%	\$76.04	164.66	157.84	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$76.04	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.28	20	\$0.86	15%	35%	\$319.03	133.46	130.89	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$319.03	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$319.03	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	1.37	20	\$0.81	45%	50%	\$326.15	108.87	106.78	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.64	20	\$0.81	45%	50%	\$326.15	-27.44	-26.31	Building Energy Simulation Tool

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Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.45	20	\$0.81	45%	50%	\$326.15	-39.08	-37.88	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.74	45	\$1.70	15%	35%	\$100.47	-233.62	-229.12	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.30	45	\$1.70	15%	35%	\$100.47	219.55	210.46	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.90	45	\$1.70	15%	35%	\$100.47	312.64	303.05	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	6.91	18	\$0.59	15%	25%	\$4.40	13.19	12.94	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	4.30	18	\$0.59	15%	25%	\$4.40	4.42	4.23	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.99	18	\$0.59	15%	25%	\$4.40	6.29	6.10	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	11.05	30	\$37.07	48%	48%	\$97.65	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	17.67	30	\$37.07	48%	48%	\$97.65	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	7.08	30	\$37.07	48%	48%	\$97.65	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	4,165.74	10	\$914.46	15%	75%	\$32.09	5.30	5.26	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	423.58	15	\$248.07	15%	75%	\$69.64	74.95	74.35	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	989.01	15	\$263.92	15%	75%	\$31.73	17.50	17.36	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	30.35	15	\$248.07	15%	75%	\$996.35	1.95	2.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	32,789.40	10	\$1,796.53	15%	75%	\$24.42	15.18	15.58	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	Existing	145.33	5	\$267.96	18%	75%	\$421.60	1,126.36	1,088.61	AEG-BEST

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Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.56	15	\$0.05	5%	15%	\$10.64	287.81	280.66	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.41	14	\$5.25	3%	75%	\$438.09	650.46	611.85	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.60	18	\$0.26	15%	20%	\$45.69	156.73	151.92	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,869.74	15	\$189.00	13%	25%	\$11.67	190.99	182.85	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	673.76	15	\$1,273.23	13%	50%	\$218.19	216.33	207.11	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.37	15	\$0.04	13%	50%	\$13.18	760.24	727.86	FAN_VSD-Ventilation-MIDATL-v3.0-13
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.04	15	\$0.23	15%	43%	\$749.66	56.44	54.03	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.95	15	\$0.76	5%	14%	\$38.75	248.22	233.48	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.30	15	\$0.76	5%	14%	\$38.75	690.50	661.08	HVAC_DOAS-Heating-7PLN-v5-1
Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,127.88	15	\$7,501.21	15%	30%	\$143.55	407.73	397.60	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	0.19	15	\$7,501.21	15%	30%	\$143.55	0.01	0.01	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	47.04	45.39	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	225.30	15	\$410.87	15%	45%	\$211.91	1,116.54	1,086.57	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	214.17	15	\$698.92	15%	75%	\$379.23	2,055.37	2,008.76	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	377.34	20	\$979.24	15%	25%	\$168.18	25.08	26.01	DHP-Cooling/Heating-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	240.78	20	\$979.24	15%	25%	\$168.18	216.33	204.20	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.78	5	\$0.75	30%	40%	\$95.83	371.11	363.96	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$95.83	152.65	146.32	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.41	5	\$0.75	30%	40%	\$95.83	217.37	210.70	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	288.51	10	\$8.63	25%	65%	\$4.29	47.97	46.10	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	317.02	10	\$17.56	25%	65%	(\$50.55)	26.35	25.32	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	78.55	10	\$16.82	25%	65%	(\$68.57)	6.45	6.20	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	0%	0%	\$8.17	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,110.20	15	\$15.38	16%	75%	\$1.62	112.42	108.04	AEG-BEST
Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,182.46	4	\$75.87	25%	40%	(\$49.07)	72.81	69.97	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	61.10	58.72	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.13	20	\$258.33	1%	30%	\$2,019.72	194.57	186.99	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.72	15	\$0.36	3%	23%	\$59.75	1,019.89	1,014.36	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.01	15	\$0.60	3%	23%	\$70.41	1,427.85	1,420.11	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	579.56	15	\$56.14	1%	3%	\$12.19	28.17	29.24	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.35	15	\$65.99	1%	3%	\$155.72	1.04	1.08	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	4,944.98	11	\$26.48	15%	30%	\$0.76	397.44	394.68	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	506.36	16	\$1,864.95	5%	15%	\$427.16	271.31	269.43	CLTG_BILVL-Interior Lighting-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.49	9	\$0.65	15%	25%	\$44.21	241.34	253.71	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	88.27	8	\$56.85	15%	25%	\$118.36	128.27	134.85	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	110.38	7	\$3,486.31	15%	30%	\$6,371.24	240.59	252.92	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	98.79	12	\$50.74	4%	25%	\$68.47	18.91	18.25	RFG_ASH-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	21.88	4	\$24.51	4%	25%	\$318.98	2.16	2.14	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	161.00	15	\$347.21	0%	0%	\$256.69	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	130.82	2	\$10.74	4%	25%	\$60.82	0.43	0.68	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	3.80	15	\$508.61	2%	13%	\$9,999.00	75.44	73.02	RFG_HECOMP-Refrigeration-AEO15-4
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	66.68	15	\$5,552.98	2%	13%	\$9,999.00	110.34	106.80	RFG_HECOMP-Refrigeration-AEO15-4

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Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	505.68	15	\$305.13	4%	25%	\$157.95	66.94	64.79	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	2,025.12	15	\$539.09	2%	13%	\$31.69	100.54	97.31	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,254.81	10	\$449.00	0%	0%	\$15.44	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	221.98	16	\$153.90	4%	25%	\$80.17	12.77	12.41	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	79.83	15	\$135.00	2%	13%	\$201.73	0.57	0.56	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	773.68	16	\$105.92	4%	25%	\$17.95	3.53	3.91	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	595.58	10	\$521.11	4%	25%	\$145.45	2.72	3.01	RFG_DDEF-Refrigeration-VTTRM-1
Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	419.55	8	\$18,135.52	4%	25%	\$9,999.00	0.05	0.08	RFG_ADC-Refrigeration-PGE-R6-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	862.02	12	\$605.15	4%	25%	\$94.03	85.59	82.84	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	44.10	8	\$15.90	0%	0%	\$60.84	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	4.54	8	\$3.87	0%	0%	\$143.65	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	15.98	5	\$49.37	0%	0%	\$721.79	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,406.33	5	\$288.64	25%	75%	\$48.09	77.62	75.28	VEND_CTRL-Miscellaneous-SCE-17R0-46
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	7,037.67	18	\$8,815.42	25%	50%	\$132.94	372.42	360.99	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	366.28	15	\$335.00	0%	0%	\$68.20	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	226.78	15	\$335.00	0%	0%	\$68.20	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	16.30	4	\$37.32	10%	50%	\$571.21	86.67	73.27	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.79	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.79	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$3.79	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$86.47	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	17,084.75	18	\$4,231.40	0%	0%	\$26.28	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$4,629.42	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	295.42	7	\$423.28	0%	0%	(\$296.92)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	4.84	7	\$423.28	0%	0%	(\$296.92)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	4.84	7	\$423.28	0%	0%	(\$296.92)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	46,416.49	15	\$1,114.41	0%	0%	\$24.42	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	254.31	15	\$1,114.41	0%	0%	\$24.42	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	8,814.06	6	\$37.07	1%	3%	\$0.82	21.42	20.51	ESTAR_WC-Miscellaneous-7PLN-v6-1
Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.03	20	\$0.26	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.27	25	\$4.24	0%	0%	\$86.97	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	Existing	0.96	25	\$4.24	0%	0%	\$86.97	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.24	0%	0%	\$86.97	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.26	25	\$4.24	0%	0%	\$86.97	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.52	25	\$4.24	0%	0%	\$86.97	0.00	0.00	ADVNC-AII-RSRCH-1

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Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$86.97	0.00	0.00	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	Existing	0.24	3	\$0.04	0%	3%	\$13.87	37.41	36.49	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	Existing	0.19	3	\$0.04	0%	3%	\$13.87	15.39	14.48	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.13	3	\$0.04	0%	3%	\$13.87	21.92	20.98	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.04	0%	3%	\$13.87	4.36	4.19	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.26	3	\$0.04	0%	3%	\$13.87	38.37	39.45	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.04	0%	3%	\$13.87	7.14	7.51	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.04	0%	3%	\$13.87	4.36	4.22	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.04	0%	3%	\$13.87	4.26	3.60	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	Existing	0.34	3	\$0.82	0%	0%	\$239.50	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	Existing	0.26	3	\$0.82	0%	0%	\$239.50	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Ventilation	Commissioning	sqft	Existing	0.18	3	\$0.82	0%	0%	\$239.50	0.00	0.00	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.82	0%	0%	\$239.50	0.00	0.00	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	Existing	0.30	3	\$0.82	0%	0%	\$239.50	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.82	0%	0%	\$239.50	0.00	0.00	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	Existing	0.06	3	\$0.82	0%	0%	\$239.50	0.00	0.00	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	Existing	0.34	3	\$0.26	10%	65%	\$76.02	949.76	926.17	COM_RCX-HVAC-AEG-1

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Large Retail	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.26	10%	65%	\$76.02	390.66	367.47	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	Existing	0.18	3	\$0.26	10%	65%	\$76.02	556.31	532.61	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.26	10%	65%	\$76.02	36.90	35.46	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.30	3	\$0.26	10%	65%	\$76.02	811.63	834.43	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.26	10%	65%	\$76.02	151.09	158.83	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.06	3	\$0.26	10%	65%	\$76.02	184.48	178.56	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.21	10	\$0.09	0%	0%	\$65.87	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.19	10	\$1.12	0%	0%	\$869.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.24	0%	0%	\$1,719.67	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.09	10	\$3.24	0%	0%	\$5,157.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$5,596.31	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	Existing	141.13	16	\$75.53	20%	75%	\$58.77	4.91	4.59	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	13,236.57	25	\$21,593.86	0%	0%	\$163.54	0.00	0.00	WHP Analysis
Large Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$94.79	0.00	0.00	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ceiling	sqft roof	New	0.77	45	\$0.84	15%	50%	\$94.79	67.68	65.67	Building Energy Simulation Tool

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Large Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$94.79	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Ducting	sqft duct	New	0.34	20	\$0.86	15%	25%	\$254.47	24.94	24.24	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$254.47	0.00	0.00	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$254.47	0.00	0.00	Building Energy Simulation Tool
Large Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.26	20	\$0.81	45%	50%	\$9,999.00	6.41	6.23	Building Energy Simulation Tool
Large Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.21	20	\$0.81	45%	50%	\$9,999.00	-2.67	-2.59	Building Energy Simulation Tool
Large Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.16	20	\$0.81	45%	50%	\$9,999.00	-4.14	-4.02	Building Energy Simulation Tool
Large Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$1.70	15%	50%	\$154.76	-5.71	-5.55	Building Energy Simulation Tool
Large Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.57	45	\$1.70	15%	50%	\$154.76	49.12	47.66	Building Energy Simulation Tool
Large Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.42	45	\$1.70	15%	50%	\$154.76	76.27	73.99	Building Energy Simulation Tool
Large Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	13.03	18	\$0.59	15%	25%	\$2.13	7.40	7.18	Building Energy Simulation Tool
Large Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	9.12	18	\$0.59	15%	25%	\$2.13	2.68	2.60	Building Energy Simulation Tool
Large Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	6.74	18	\$0.59	15%	25%	\$2.13	4.16	4.04	Building Energy Simulation Tool
Large Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	8.78	30	\$37.07	66%	66%	\$119.37	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Large Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	14.13	30	\$37.07	66%	66%	\$119.37	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Large Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.01	30	\$37.07	66%	66%	\$119.37	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Large Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	3,107.07	10	\$914.46	15%	75%	\$40.98	0.56	0.52	AEG-BEST
Large Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	315.93	15	\$248.07	15%	75%	\$88.94	9.83	9.29	AEG-BEST
Large Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	737.66	15	\$263.92	15%	75%	\$40.53	2.30	2.17	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Large Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	20.52	15	\$248.07	15%	75%	\$1,369.19	0.24	0.23	CHLR_VSPMP-Cooling-SCE-17_R0-86
Large Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	21,959.25	10	\$1,796.53	15%	75%	\$33.89	1.50	1.41	AEG-BEST
Large Retail	Cooling	HVAC - Economizer	HP cool	New	116.01	5	\$267.96	18%	75%	\$520.45	71.22	66.86	AEG-BEST
Large Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.44	15	\$0.05	10%	15%	\$13.09	19.33	18.35	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Large Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.13	14	\$5.25	6%	75%	\$546.08	78.77	74.37	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.50	18	\$0.26	15%	20%	\$53.17	38.82	37.63	RES_HRV-Cooling-7PLN-v1-2
Large Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,815.59	15	\$189.00	19%	25%	\$11.79	12.78	12.08	VENT_PMSM-Ventilation-AEG-2016-2
Large Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	654.25	15	\$1,273.23	19%	50%	\$220.34	25.39	23.99	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Large Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.04	19%	50%	\$13.31	89.22	84.30	AEG-BEST
Large Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	15%	43%	\$872.36	7.95	7.51	VENT_DCV-Ventilation-7PLN-v5-5
Large Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.84	15	\$0.76	5%	14%	\$61.46	35.76	33.80	HVAC_DOAS-Heating-7PLN-v5-25
Large Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	5%	14%	\$61.46	49.57	46.84	HVAC_DOAS-Heating-7PLN-v5-1

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Large Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,866.04	15	\$7,501.21	15%	30%	\$176.50	54.78	52.00	HVLS-Cooling-AEG-1
Large Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	0.15	15	\$7,501.21	15%	30%	\$176.50	0.00	0.00	HVLS-Heating-AEG-1
Large Retail	Cooling	RTU - Maintenance	tonCool	New	6.94	3	\$33.20	15%	45%	\$1,628.79	1.42	1.32	RTU_MNT-Cooling-PGE-R2-1
Large Retail	Cooling	RTU - Advanced Controls	tonCool	New	178.82	15	\$410.87	15%	45%	\$263.28	247.17	237.84	RTU_CTRL-Cooling-RTF-1.1-1
Large Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	169.98	15	\$698.92	15%	75%	\$471.15	552.41	535.93	RTU_PREC-Cooling-XCELCO-2017-18-1
Large Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	272.22	20	\$979.24	15%	25%	\$209.49	4.41	4.19	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	193.78	20	\$979.24	15%	25%	\$209.49	35.77	33.98	DHP-Cooling/Heating-7PLN-v2-1
Large Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.62	5	\$0.75	30%	40%	\$116.63	28.43	27.12	STAT_WIFI-All-7PLN-v2-1
Large Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.48	5	\$0.75	30%	40%	\$116.63	11.33	10.76	STAT_WIFI-All-7PLN-v2-1
Large Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$116.63	17.59	16.71	STAT_WIFI-All-7PLN-v2-1
Large Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	91.51	10	\$8.63	25%	65%	\$13.13	5.17	4.84	DHW_AER-Water Heating-ILTRM-v4.0-1
Large Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	100.56	10	\$17.56	25%	65%	(\$154.81)	2.84	2.66	DHW_SHW-Water Heating-RTF-v3.1-4
Large Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	24.92	10	\$16.82	25%	65%	(\$210.01)	0.83	0.78	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Large Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	0%	0%	\$8.34	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Large Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,056.43	15	\$15.38	1%	75%	\$1.65	22.55	21.31	AEG-BEST

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Large Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	375.06	4	\$75.87	25%	40%	(\$150.27)	4.59	4.27	DHW_SPR-Water Heating-RTF-v2.4-1
Large Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	2.05	1.90	DHW_STBK-Water Heating-ILTRM-v4.0-4
Large Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,061.89	32.09	30.36	AEG-BEST
Large Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.67	15	\$0.36	11%	23%	\$61.76	341.31	333.14	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.94	15	\$0.60	11%	23%	\$72.79	477.84	466.40	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Large Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	536.79	15	\$56.14	1%	3%	\$12.59	3.83	3.74	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.66	15	\$65.99	1%	3%	\$148.00	0.14	0.14	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Large Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Large Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	4,557.91	11	\$26.48	15%	30%	\$0.78	54.36	51.82	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Large Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	466.72	16	\$1,864.95	5%	15%	\$441.24	44.68	42.79	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Large Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.26	9	\$0.65	15%	25%	\$46.38	28.79	28.34	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Large Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	80.23	8	\$56.85	15%	25%	\$124.18	14.13	13.91	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Large Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	100.33	7	\$3,486.31	15%	30%	\$6,684.88	23.97	23.60	CLTG_EXT_PV-Exterior Lighting-AEG-2
Large Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	92.60	12	\$50.74	4%	25%	\$69.84	2.72	2.56	RFG_ASH-Refrigeration-7PLN-v6-1

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Large Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	20.48	4	\$24.51	4%	25%	\$325.48	0.14	0.13	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Large Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	151.66	15	\$347.21	0%	0%	\$260.14	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	110.43	2	\$10.74	4%	25%	\$71.59	0.01	0.02	RFG_STR-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	3.58	15	\$508.61	2%	13%	\$9,999.00	12.24	11.58	RFG_HECOMP-Refrigeration-AEO17-3
Large Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	62.81	15	\$5,552.98	2%	13%	\$9,999.00	17.90	16.94	RFG_HECOMP-Refrigeration-AEO17-5
Large Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	476.35	15	\$305.13	4%	25%	\$160.07	10.86	10.27	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Large Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,907.65	15	\$539.09	2%	13%	\$32.11	16.31	15.43	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	4,008.01	10	\$449.00	0%	0%	\$15.65	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Large Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	208.58	16	\$153.90	4%	25%	\$81.39	2.12	2.01	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Large Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	75.01	15	\$135.00	2%	13%	\$204.81	0.09	0.09	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Large Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	702.79	16	\$105.92	4%	25%	\$18.91	0.59	0.59	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Large Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	541.01	10	\$521.11	4%	25%	\$153.28	0.35	0.36	RFG_DDEF-Refrigeration-VTTRM-1

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Large Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	12.65	8	\$647.70	4%	25%	\$9,999.00	0.01	0.01	RFG_ASH-Refrigeration-NMTRM-2016-1
Large Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	812.02	12	\$5,648.09	4%	25%	\$889.40	12.41	11.70	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Large Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	41.49	8	\$15.90	0%	0%	\$61.69	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Large Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.28	8	\$3.87	0%	0%	\$145.66	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Large Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	14.92	5	\$49.37	0%	0%	\$737.20	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Large Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,307.20	5	\$288.64	25%	75%	\$49.19	5.97	5.56	VEND_CTRL-Miscellaneous-SCE-17R0-41
Large Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	5,930.76	18	\$8,815.42	25%	50%	\$154.69	92.24	89.43	COOK_EXHD-Food Preparation-7PLN-v3-10
Large Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	266.12	15	\$335.00	0%	0%	\$84.27	0.00	0.00	AEG - BEST
Large Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	184.17	15	\$335.00	0%	0%	\$84.27	0.00	0.00	AEG - BEST
Large Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	15.94	4	\$37.32	10%	50%	\$583.23	5.33	4.49	SMARTSTRIP-Electronics-RTF-v3.2-1
Large Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Large Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.60	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Large Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.60	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.60	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$57.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Large Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	14,397.58	18	\$4,231.40	0%	0%	\$30.59	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Large Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Large Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Large Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Large Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$4,428.32	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Large Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	281.11	7	\$423.28	0%	0%	(\$303.04)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	4.61	7	\$423.28	0%	0%	(\$303.04)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	4.61	7	\$423.28	0%	0%	(\$303.04)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Large Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	44,168.38	15	\$1,114.41	0%	0%	\$24.93	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	234.30	15	\$1,114.41	0%	0%	\$24.93	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Large Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	2,924.96	6	\$37.07	1%	3%	\$2.48	2.95	2.83	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Large Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.03	20	\$0.24	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Large Retail	Cooling	Advanced New Construction Designs	sqft	New	1.24	25	\$4.24	10%	30%	\$84.86	286.48	278.97	ADVNC-AII-RSRCH-1
Large Retail	Heating	Advanced New Construction Designs	sqft	New	0.96	25	\$4.24	10%	30%	\$84.86	114.14	111.00	ADVNC-AII-RSRCH-1
Large Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.71	25	\$4.24	10%	30%	\$84.86	177.22	172.32	ADVNC-AII-RSRCH-1
Large Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.26	25	\$4.24	10%	30%	\$84.86	40.23	39.12	ADVNC-AII-RSRCH-1
Large Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.53	25	\$4.24	10%	30%	\$84.86	1,411.15	1,389.42	ADVNC-AII-RSRCH-1
Large Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	30%	\$84.86	194.91	192.81	ADVNC-AII-RSRCH-1
Large Retail	Cooling	Strategic Energy Management	sqft	New	0.19	3	\$0.03	0%	3%	\$11.66	1.53	1.44	COM_SEM-HVAC-AEG-1
Large Retail	Heating	Strategic Energy Management	sqft	New	0.15	3	\$0.03	0%	3%	\$11.66	0.61	0.57	COM_SEM-HVAC-AEG-1
Large Retail	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.03	0%	3%	\$11.66	0.95	0.88	COM_SEM-HVAC-AEG-1
Large Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.03	0%	3%	\$11.66	0.22	0.20	COM_SEM-Water Heating-AEG-1
Large Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.24	3	\$0.03	0%	3%	\$11.66	1.89	1.84	COM_SEM-Lighting-AEG-1
Large Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.03	0%	3%	\$11.66	0.35	0.34	COM_SEM-Lighting-AEG-1
Large Retail	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.03	0%	3%	\$11.66	0.22	0.20	COM_SEM-Refrigeration-AEG-1
Large Retail	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.03	0%	3%	\$11.66	0.20	0.17	COM_SEM-Office Equipment-AEG-1
Large Retail	Cooling	Commissioning	sqft	New	0.27	3	\$0.59	10%	65%	\$198.17	252.13	243.14	COM_CX-HVAC-AEG-1
Large Retail	Heating	Commissioning	sqft	New	0.21	3	\$0.59	10%	65%	\$198.17	100.46	96.62	COM_CX-HVAC-AEG-1

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Large Retail	Ventilation	Commissioning	sqft	New	0.15	3	\$0.59	10%	65%	\$198.17	155.97	149.99	COM_CX-HVAC-AEG-1
Large Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.59	10%	65%	\$198.17	11.80	11.35	COM_CX-Water Heating-AEG-1
Large Retail	Interior Lighting	Commissioning	sqft	New	0.27	3	\$0.59	10%	65%	\$198.17	1,034.95	1,015.34	COM_CX-Lighting-AEG-1
Large Retail	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.59	10%	65%	\$198.17	142.95	141.23	COM_CX-Lighting-AEG-1
Large Retail	Refrigeration	Commissioning	sqft	New	0.06	3	\$0.59	10%	65%	\$198.17	168.03	161.72	COM_CX-Refrigeration-AEG-1
Large Retail	Cooling	Retrocommissioning	sqft	New	0.27	3	\$0.19	0%	0%	\$62.90	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Heating	Retrocommissioning	sqft	New	0.21	3	\$0.19	0%	0%	\$62.90	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.19	0%	0%	\$62.90	0.00	0.00	COM_RCX-HVAC-AEG-1
Large Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.19	0%	0%	\$62.90	0.00	0.00	COM_RCX-Water Heating-AEG-1
Large Retail	Interior Lighting	Retrocommissioning	sqft	New	0.27	3	\$0.19	0%	0%	\$62.90	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.19	0%	0%	\$62.90	0.00	0.00	COM_RCX-Lighting-AEG-1
Large Retail	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.19	0%	0%	\$62.90	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Large Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.19	10	\$0.09	0%	0%	\$67.99	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.18	10	\$1.12	0%	0%	\$881.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.05	3	\$0.24	0%	0%	\$1,742.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Large Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.09	10	\$3.24	0%	0%	\$5,226.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$5,671.58	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Large Retail	Miscellaneous	LED Signage	perBldg	New	140.50	16	\$75.53	20%	75%	\$59.03	0.70	0.66	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Large Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	14,159.96	25	\$21,591.39	0%	0%	\$148.57	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	Existing	0.26	45	\$0.84	15%	35%	\$110.25	322.56	319.10	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$0.84	15%	35%	\$110.25	163.93	161.77	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$110.25	70.05	67.77	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	Existing	0.56	20	\$0.86	15%	50%	\$162.59	296.58	293.40	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$162.59	0.00	0.00	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$162.59	0.00	0.00	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.60	20	\$0.81	45%	50%	\$290.91	183.37	181.40	Building Energy Simulation Tool
Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$290.91	-27.32	-26.96	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$290.91	-20.59	-19.92	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.12	45	\$1.70	15%	35%	\$78.81	-45.08	-44.59	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.67	45	\$1.70	15%	35%	\$78.81	218.57	215.69	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.39	45	\$1.70	15%	35%	\$78.81	164.70	159.34	Building Energy Simulation Tool

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Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	7.49	18	\$0.59	15%	50%	\$38.76	64.03	63.34	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-4.68	18	\$0.59	15%	50%	\$38.76	-14.33	-14.14	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.11	18	\$0.59	15%	50%	\$38.76	-10.80	-10.45	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	11.26	30	\$37.07	48%	48%	\$106.94	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	Existing	19.62	30	\$37.07	48%	48%	\$106.94	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.67	30	\$37.07	48%	48%	\$106.94	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	HVAC - Economizer	HP cool	Existing	159.78	5	\$267.96	18%	75%	\$383.29	1,356.64	1,310.48	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.60	15	\$0.05	5%	15%	\$10.02	395.50	390.86	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.65	14	\$5.25	3%	75%	\$389.62	647.56	637.34	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.24	18	\$0.26	15%	20%	\$114.61	82.57	79.88	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	719.11	15	\$189.00	13%	25%	\$30.26	100.62	96.03	VENT_PMSM-Ventilation-AEG-2016-2

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Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	259.13	15	\$1,273.23	13%	25%	\$565.70	36.26	34.60	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.15	15	\$0.04	13%	25%	\$34.17	127.42	121.61	FAN_VSD-Ventilation-MIDATL-v3.0-13
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	1%	33%	\$1,880.51	33.45	31.93	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.12	15	\$0.76	0%	11%	\$54.65	278.04	273.66	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.52	15	\$0.76	0%	11%	\$54.65	409.30	390.64	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	6,579.68	15	\$7,501.21	15%	15%	\$51.68	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,605.17	15	\$7,501.21	15%	15%	\$51.68	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	52.68	50.84	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	Existing	247.12	15	\$410.87	15%	45%	\$193.20	1,371.57	1,334.75	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	Existing	234.91	15	\$698.92	15%	75%	\$345.74	2,524.84	2,467.58	RTU_PREC-Cooling-XCELCO-2017-18-1
Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	336.78	20	\$979.24	15%	75%	\$150.62	121.20	125.72	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	344.96	20	\$979.24	15%	75%	\$150.62	599.18	565.58	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.84	5	\$0.75	30%	40%	\$103.14	509.97	504.50	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.69	5	\$0.75	30%	40%	\$103.14	151.97	149.96	STAT_WIFI-AII-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.16	5	\$0.75	30%	40%	\$103.14	114.51	110.78	STAT_WIFI-AII-7PLN-v2-1

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Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	38.37	10	\$8.63	25%	65%	\$32.24	56.81	54.59	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	42.16	10	\$17.56	25%	65%	(\$380.05)	31.21	29.99	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	10.45	10	\$16.82	25%	65%	(\$515.58)	7.64	7.34	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	0%	0%	\$8.17	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	147.58	15	\$15.38	16%	75%	\$12.15	133.06	127.87	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	157.27	4	\$75.87	25%	40%	(\$368.91)	86.23	82.87	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	72.36	69.54	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.13	20	\$258.33	1%	30%	\$2,019.56	230.44	221.46	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.48	15	\$0.36	3%	23%	\$90.52	887.91	883.09	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.67	15	\$0.60	3%	23%	\$106.69	1,243.07	1,236.33	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	172.13	15	\$56.14	1%	3%	\$41.06	24.53	25.45	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.35	15	\$65.99	1%	3%	\$155.72	1.31	1.36	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,263.69	11	\$26.48	15%	30%	\$1.15	346.00	343.60	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	334.20	16	\$1,864.95	5%	15%	\$647.21	236.20	234.56	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.49	9	\$0.65	15%	25%	\$44.21	318.35	334.67	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	88.27	8	\$56.85	15%	25%	\$118.36	169.20	177.88	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	110.38	7	\$3,486.31	15%	30%	\$6,371.24	317.36	333.63	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	9.05	12	\$50.74	4%	25%	\$747.14	1.00	0.96	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	1.86	4	\$24.51	4%	25%	\$3,643.52	0.19	0.18	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	12.70	15	\$347.21	0%	0%	\$3,243.23	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	0.00	2	\$10.74	4%	25%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.30	15	\$508.61	2%	13%	\$9,999.00	4.86	4.69	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	5.26	15	\$5,552.98	2%	13%	\$9,999.00	7.11	6.86	RFG_HECOMP-Refrigeration-AEO15-4
Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	39.88	15	\$305.13	4%	25%	\$1,995.68	4.32	4.16	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	159.72	15	\$539.09	2%	13%	\$400.35	6.48	6.25	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	335.57	10	\$449.00	0%	0%	\$195.08	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	20.29	16	\$153.90	4%	25%	\$872.78	0.67	0.65	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	7.30	15	\$135.00	2%	13%	\$2,196.18	0.03	0.03	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	50.28	16	\$105.92	4%	25%	\$241.96	0.83	0.80	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	38.70	10	\$521.11	4%	25%	\$1,960.87	0.64	0.62	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	0.00	8	\$18,135.52	4%	25%	\$0.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	67.99	12	\$605.15	4%	25%	\$1,188.04	5.52	5.32	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	4.04	8	\$15.90	0%	0%	\$663.84	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.42	8	\$3.87	0%	0%	\$1,567.50	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	1.46	5	\$49.37	0%	0%	\$7,875.98	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,482.68	5	\$288.64	25%	75%	\$45.61	6.42	6.23	VEND_CTRL-Miscellaneous-SCE-17R0-47
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,797.65	18	\$8,815.42	25%	50%	\$333.47	196.19	189.80	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	326.90	15	\$335.00	0%	0%	\$61.82	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	320.25	15	\$335.00	0%	0%	\$61.82	0.00	0.00	AEG - BEST

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Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	10.22	4	\$37.32	10%	50%	\$862.67	79.02	62.28	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$2.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.17	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$38.45	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,018.74	18	\$4,231.40	0%	0%	\$439.57	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.15	0%	0%	\$5,212.05	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	39.29	7	\$423.28	0%	0%	(\$2,305.07)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$2,305.07)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$2,305.07)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	6,173.48	15	\$1,114.41	0%	0%	\$184.56	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$184.56	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,031.69	6	\$37.07	1%	3%	\$7.02	22.05	21.12	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.18	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	Existing	1.21	25	\$4.24	0%	0%	\$108.98	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	Existing	1.01	25	\$4.24	0%	0%	\$108.98	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$108.98	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$108.98	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.00	25	\$4.24	0%	0%	\$108.98	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.29	25	\$4.24	0%	0%	\$108.98	0.00	0.00	ADVNC-AII-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	Existing	0.26	3	\$0.03	0%	3%	\$11.84	51.41	50.81	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	Existing	0.22	3	\$0.03	0%	3%	\$11.84	15.32	15.08	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	Existing	0.05	3	\$0.03	0%	3%	\$11.84	11.55	11.02	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.03	0%	3%	\$11.84	5.16	4.96	COM_SEM-Water Heating-AEG-1

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Small Retail	Interior Lighting	Strategic Energy Management	sqft	Existing	0.17	3	\$0.03	0%	3%	\$11.84	33.40	34.34	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.03	0%	3%	\$11.84	9.42	9.90	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.03	0%	3%	\$11.84	0.28	0.27	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.03	0%	3%	\$11.84	3.88	3.06	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	Existing	0.36	3	\$0.63	0%	0%	\$225.33	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	Existing	0.30	3	\$0.63	0%	0%	\$225.33	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	Existing	0.07	3	\$0.63	0%	0%	\$225.33	0.00	0.00	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.63	0%	0%	\$225.33	0.00	0.00	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	Existing	0.19	3	\$0.63	0%	0%	\$225.33	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	Existing	0.06	3	\$0.63	0%	0%	\$225.33	0.00	0.00	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$0.63	0%	0%	\$225.33	0.00	0.00	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	Existing	0.36	3	\$0.20	10%	65%	\$71.52	1,305.14	1,289.83	COM_RCX-HVAC-AEG-1
Small Retail	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.20	10%	65%	\$71.52	388.92	382.79	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	Existing	0.07	3	\$0.20	10%	65%	\$71.52	293.07	279.71	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.20	10%	65%	\$71.52	43.70	41.99	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	Existing	0.19	3	\$0.20	10%	65%	\$71.52	706.60	726.44	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	Existing	0.06	3	\$0.20	10%	65%	\$71.52	199.29	209.51	COM_RCX-Lighting-AEG-1

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Small Retail	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$0.20	10%	65%	\$71.52	11.89	11.47	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.14	10	\$0.09	0%	0%	\$99.80	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	Existing	141.13	16	\$75.53	20%	75%	\$58.77	43.15	40.34	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,824.40	25	\$2,976.28	0%	0%	\$163.54	0.00	0.00	WHP Analysis
Small Retail	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$268.28	0.00	0.00	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ceiling	sqft roof	New	0.27	45	\$0.84	15%	50%	\$268.28	63.97	62.13	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$268.28	3.56	3.46	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Ducting	sqft duct	New	0.68	20	\$0.86	15%	50%	\$106.90	113.31	110.15	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Ducting	sqft duct	New	0.10	20	\$0.86	15%	50%	\$106.90	6.15	5.97	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Ducting	sqft duct	New	0.03	20	\$0.86	15%	50%	\$106.90	5.45	5.29	Building Energy Simulation Tool
Small Retail	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.15	20	\$0.81	45%	50%	\$1,484.14	14.25	13.85	Building Energy Simulation Tool

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Small Retail	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.07	20	\$0.81	45%	50%	\$1,484.14	-2.50	-2.43	Building Energy Simulation Tool
Small Retail	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$1,484.14	-2.22	-2.15	Building Energy Simulation Tool
Small Retail	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$455.99	-0.60	-0.59	Building Energy Simulation Tool
Small Retail	Heating	Insulation - Wall Cavity	sqft wall	New	0.25	45	\$1.70	15%	50%	\$455.99	18.15	17.63	Building Energy Simulation Tool
Small Retail	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.07	45	\$1.70	15%	50%	\$455.99	16.09	15.61	Building Energy Simulation Tool
Small Retail	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	5.66	18	\$0.59	15%	50%	\$2.95	14.66	14.24	Building Energy Simulation Tool
Small Retail	Heating	HVAC - Duct Repair and Sealing	tonCool	New	11.81	18	\$0.59	15%	50%	\$2.95	10.95	10.63	Building Energy Simulation Tool
Small Retail	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	3.40	18	\$0.59	15%	50%	\$2.95	9.71	9.41	Building Energy Simulation Tool
Small Retail	Cooling	Windows - High Efficiency Glazing	sqft window	New	7.98	30	\$37.07	66%	66%	\$142.29	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Small Retail	Heating	Windows - High Efficiency Glazing	sqft window	New	14.06	30	\$37.07	66%	66%	\$142.29	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Small Retail	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.33	30	\$37.07	66%	66%	\$142.29	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Small Retail	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Small Retail	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Small Retail	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Small Retail	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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Small Retail	Cooling	HVAC - Economizer	HP cool	New	111.03	5	\$267.96	18%	75%	\$543.94	74.59	70.04	AEG-BEST
Small Retail	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.43	15	\$0.05	10%	15%	\$13.66	24.16	22.94	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Small Retail	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.18	14	\$5.25	6%	75%	\$524.60	74.44	70.47	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.21	18	\$0.26	15%	20%	\$129.98	20.94	20.31	RES_HRV-Cooling-7PLN-v1-2
Small Retail	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	668.34	15	\$189.00	19%	25%	\$32.02	6.90	6.52	VENT_PMSM-Ventilation-AEG-2016-2
Small Retail	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	240.84	15	\$1,273.23	19%	25%	\$598.61	2.49	2.35	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Small Retail	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.13	15	\$0.04	19%	25%	\$36.16	8.73	8.25	AEG-BEST
Small Retail	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	1%	33%	\$2,132.71	4.83	4.56	VENT_DCV-Ventilation-7PLN-v5-5
Small Retail	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.89	15	\$0.76	0%	11%	\$77.82	38.03	36.04	HVAC_DOAS-Heating-7PLN-v5-25
Small Retail	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.23	15	\$0.76	0%	11%	\$77.82	30.09	28.44	HVAC_DOAS-Heating-7PLN-v5-1
Small Retail	Cooling	Destratification Fans (HVLS)	Strat Fan	New	4,663.95	15	\$7,501.21	15%	15%	\$69.90	0.00	0.00	HVLS-Cooling-AEG-1
Small Retail	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,602.52	15	\$7,501.21	15%	15%	\$69.90	0.00	0.00	HVLS-Heating-AEG-1
Small Retail	Cooling	RTU - Maintenance	tonCool	New	6.04	3	\$33.20	15%	45%	\$1,873.70	1.38	1.29	RTU_MNT-Cooling-PGE-R2-1
Small Retail	Cooling	RTU - Advanced Controls	tonCool	New	170.50	15	\$410.87	15%	45%	\$276.12	263.94	253.98	RTU_CTRL-Cooling-RTF-1.1-1
Small Retail	Cooling	RTU - Evaporative Precooler	tonCool	New	162.08	15	\$698.92	15%	75%	\$494.13	589.90	572.29	RTU_PREC-Cooling-XCELCO-2017-18-1

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Small Retail	Cooling	Ductless Mini Split Heat Pump	tonCool	New	239.07	20	\$979.24	15%	75%	\$191.63	21.00	19.94	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Heating	Ductless Mini Split Heat Pump	tonCool	New	270.35	20	\$979.24	15%	75%	\$191.63	96.48	91.64	DHP-Cooling/Heating-7PLN-v2-1
Small Retail	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.59	5	\$0.75	30%	40%	\$137.01	35.52	33.89	STAT_WIFI-All-7PLN-v2-1
Small Retail	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.50	5	\$0.75	30%	40%	\$137.01	10.70	10.20	STAT_WIFI-All-7PLN-v2-1
Small Retail	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.14	5	\$0.75	30%	40%	\$137.01	9.49	9.02	STAT_WIFI-All-7PLN-v2-1
Small Retail	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	36.51	10	\$8.63	25%	65%	\$32.91	6.12	5.73	DHW_AER-Water Heating-ILTRM-v4.0-1
Small Retail	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	40.12	10	\$17.56	25%	65%	(\$387.98)	3.36	3.15	DHW_SHW-Water Heating-RTF-v3.1-4
Small Retail	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	9.94	10	\$16.82	25%	65%	(\$526.34)	0.99	0.93	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Small Retail	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	0%	0%	\$8.34	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Small Retail	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	140.43	15	\$15.38	1%	75%	\$12.41	26.69	25.23	AEG-BEST
Small Retail	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	149.65	4	\$75.87	25%	40%	(\$376.61)	5.43	5.05	DHW_SPR-Water Heating-RTF-v2.4-1
Small Retail	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	2.43	2.25	DHW_STBK-Water Heating-ILTRM-v4.0-4
Small Retail	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,061.73	38.00	35.95	AEG-BEST
Small Retail	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.44	15	\$0.36	11%	23%	\$93.57	297.14	290.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Small Retail	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.62	15	\$0.60	11%	23%	\$110.28	416.00	406.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Small Retail	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	159.43	15	\$56.14	1%	3%	\$42.38	3.34	3.26	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.66	15	\$65.99	1%	3%	\$148.00	0.18	0.17	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Small Retail	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Small Retail	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,008.22	11	\$26.48	15%	30%	\$1.19	47.33	45.11	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Small Retail	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	308.04	16	\$1,864.95	5%	15%	\$668.54	38.90	37.25	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Small Retail	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.26	9	\$0.65	15%	25%	\$46.38	37.97	37.38	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Small Retail	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	80.23	8	\$56.85	15%	25%	\$124.18	18.64	18.35	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Small Retail	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	100.33	7	\$3,486.31	15%	30%	\$6,684.88	31.62	31.14	CLTG_EXT_PV-Exterior Lighting-AEG-2
Small Retail	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	8.49	12	\$50.74	4%	25%	\$762.09	0.14	0.14	RFG_ASH-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	1.76	4	\$24.51	4%	25%	\$3,690.19	0.01	0.01	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Small Retail	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	11.98	15	\$347.21	0%	0%	\$3,282.72	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	0.00	2	\$10.74	4%	25%	\$0.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.28	15	\$508.61	2%	13%	\$9,999.00	0.79	0.75	RFG_HECOMP-Refrigeration-AEO17-3
Small Retail	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	4.96	15	\$5,552.98	2%	13%	\$9,999.00	1.15	1.09	RFG_HECOMP-Refrigeration-AEO17-5

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Small Retail	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	37.63	15	\$305.13	4%	25%	\$2,019.99	0.70	0.66	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Small Retail	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	150.70	15	\$539.09	2%	13%	\$405.22	1.05	0.99	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	316.61	10	\$449.00	0%	0%	\$197.46	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Small Retail	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	19.10	16	\$153.90	4%	25%	\$884.96	0.11	0.11	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Small Retail	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	6.87	15	\$135.00	2%	13%	\$2,226.81	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Small Retail	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	47.46	16	\$105.92	4%	25%	\$245.06	0.14	0.13	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Small Retail	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	36.54	10	\$521.11	4%	25%	\$1,985.98	0.08	0.08	RFG_DDEF-Refrigeration-VTTRM-1
Small Retail	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	0.00	8	\$647.70	4%	25%	\$0.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Small Retail	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	64.15	12	\$5,648.09	4%	25%	\$9,999.00	0.80	0.75	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Small Retail	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	3.80	8	\$15.90	0%	0%	\$673.09	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Small Retail	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.39	8	\$3.87	0%	0%	\$1,589.36	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Small Retail	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	1.37	5	\$49.37	0%	0%	\$8,044.14	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Small Retail	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,378.17	5	\$288.64	25%	75%	\$46.66	0.49	0.46	VEND_CTRL-Miscellaneous-SCE-17R0-41
Small Retail	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	2,426.01	18	\$8,815.42	25%	50%	\$378.19	49.77	48.25	COOK_EXHD-Food Preparation-7PLN-v3-10
Small Retail	Cooling	Lodging - Guest Room Controls	LodgUnit	New	233.71	15	\$335.00	0%	0%	\$77.78	0.00	0.00	AEG - BEST
Small Retail	Heating	Lodging - Guest Room Controls	LodgUnit	New	254.16	15	\$335.00	0%	0%	\$77.78	0.00	0.00	AEG - BEST
Small Retail	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	9.93	4	\$37.32	10%	50%	\$905.82	4.65	3.73	SMARTSTRIP-Electronics-RTF-v3.2-1
Small Retail	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Small Retail	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.03	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$20.43	0.00	0.00	com-datacenters-7p_v5p.xlsx
Small Retail	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	883.41	18	\$4,231.40	0%	0%	\$498.52	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Small Retail	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Small Retail	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Small Retail	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$18,906.62	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Small Retail	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.14	0%	0%	\$4,963.63	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Small Retail	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	37.39	7	\$423.28	0%	0%	(\$2,353.20)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$2,353.20)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$2,353.20)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Small Retail	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	5,874.48	15	\$1,114.41	0%	0%	\$188.42	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$188.42	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Small Retail	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,027.11	6	\$37.07	1%	3%	\$7.05	3.04	2.92	ESTAR_WC-Miscellaneous-7PLN-v6-1
Small Retail	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.16	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Small Retail	Cooling	Advanced New Construction Designs	sqft	New	1.19	25	\$4.24	10%	25%	\$105.46	268.49	261.47	ADVNC-AII-RSRCH-1
Small Retail	Heating	Advanced New Construction Designs	sqft	New	1.00	25	\$4.24	10%	25%	\$105.46	80.91	78.74	ADVNC-AII-RSRCH-1
Small Retail	Ventilation	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$105.46	71.71	69.73	ADVNC-AII-RSRCH-1
Small Retail	Water Heating	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$105.46	35.74	34.75	ADVNC-AII-RSRCH-1
Small Retail	Interior Lighting	Advanced New Construction Designs	sqft	New	1.01	25	\$4.24	10%	25%	\$105.46	921.40	907.21	ADVNC-AII-RSRCH-1

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Small Retail	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.29	25	\$4.24	10%	25%	\$105.46	192.82	190.75	ADVNC-All-RSRCH-1
Small Retail	Cooling	Strategic Energy Management	sqft	New	0.18	3	\$0.02	0%	3%	\$9.18	1.92	1.79	COM_SEM-HVAC-AEG-1
Small Retail	Heating	Strategic Energy Management	sqft	New	0.16	3	\$0.02	0%	3%	\$9.18	0.58	0.54	COM_SEM-HVAC-AEG-1
Small Retail	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.02	0%	3%	\$9.18	0.51	0.48	COM_SEM-HVAC-AEG-1
Small Retail	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.02	0%	3%	\$9.18	0.26	0.24	COM_SEM-Water Heating-AEG-1
Small Retail	Interior Lighting	Strategic Energy Management	sqft	New	0.16	3	\$0.02	0%	3%	\$9.18	1.64	1.60	COM_SEM-Lighting-AEG-1
Small Retail	Exterior Lighting	Strategic Energy Management	sqft	New	0.05	3	\$0.02	0%	3%	\$9.18	0.46	0.45	COM_SEM-Lighting-AEG-1
Small Retail	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.02	0%	3%	\$9.18	0.01	0.01	COM_SEM-Refrigeration-AEG-1
Small Retail	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.02	0%	3%	\$9.18	0.18	0.14	COM_SEM-Office Equipment-AEG-1
Small Retail	Cooling	Commissioning	sqft	New	0.26	3	\$0.39	10%	65%	\$171.73	315.06	303.87	COM_CX-HVAC-AEG-1
Small Retail	Heating	Commissioning	sqft	New	0.21	3	\$0.39	10%	65%	\$171.73	94.94	91.46	COM_CX-HVAC-AEG-1
Small Retail	Ventilation	Commissioning	sqft	New	0.06	3	\$0.39	10%	65%	\$171.73	84.15	80.93	COM_CX-HVAC-AEG-1
Small Retail	Water Heating	Commissioning	sqft	New	0.02	3	\$0.39	10%	65%	\$171.73	13.98	13.44	COM_CX-Water Heating-AEG-1
Small Retail	Interior Lighting	Commissioning	sqft	New	0.18	3	\$0.39	10%	65%	\$171.73	901.01	883.94	COM_CX-Lighting-AEG-1
Small Retail	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.39	10%	65%	\$171.73	188.56	186.29	COM_CX-Lighting-AEG-1
Small Retail	Refrigeration	Commissioning	sqft	New	0.00	3	\$0.39	10%	65%	\$171.73	1.00	0.96	COM_CX-Refrigeration-AEG-1
Small Retail	Cooling	Retrocommissioning	sqft	New	0.26	3	\$0.12	0%	0%	\$54.51	0.00	0.00	COM_RCX-HVAC-AEG-1

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Small Retail	Heating	Retrocommissioning	sqft	New	0.21	3	\$0.12	0%	0%	\$54.51	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Ventilation	Retrocommissioning	sqft	New	0.06	3	\$0.12	0%	0%	\$54.51	0.00	0.00	COM_RCX-HVAC-AEG-1
Small Retail	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.12	0%	0%	\$54.51	0.00	0.00	COM_RCX-Water Heating-AEG-1
Small Retail	Interior Lighting	Retrocommissioning	sqft	New	0.18	3	\$0.12	0%	0%	\$54.51	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.12	0%	0%	\$54.51	0.00	0.00	COM_RCX-Lighting-AEG-1
Small Retail	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$0.12	0%	0%	\$54.51	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Small Retail	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.13	10	\$0.09	0%	0%	\$103.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.01	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Small Retail	Miscellaneous	LED Signage	perBldg	New	140.50	16	\$75.53	20%	75%	\$59.03	6.12	5.78	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Small Retail	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,958.79	25	\$2,986.80	0%	0%	\$148.57	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	Existing	0.04	45	\$0.84	15%	35%	\$209.18	10.44	10.26	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	Existing	0.32	45	\$0.84	15%	35%	\$209.18	15.44	15.10	Building Energy Simulation Tool

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Restaurant	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$209.18	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	Existing	0.04	20	\$0.86	15%	35%	\$2,297.56	2.48	2.43	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$2,297.56	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$2,297.56	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.28	20	\$0.81	45%	50%	\$9,999.00	17.85	17.55	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.19	20	\$0.81	45%	50%	\$9,999.00	-2.30	-2.25	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.81	45%	50%	\$9,999.00	-7.19	-6.91	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.49	45	\$1.70	15%	35%	\$382.01	-74.06	-72.80	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.58	45	\$1.70	15%	35%	\$382.01	16.85	16.48	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.29	45	\$1.70	15%	35%	\$382.01	52.76	50.75	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.97	18	\$0.59	15%	50%	\$9,999.00	-10.08	-9.91	Building Energy Simulation Tool
Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.31	18	\$0.59	15%	50%	\$9,999.00	-3.05	-2.98	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-3.18	18	\$0.59	15%	50%	\$9,999.00	-9.54	-9.18	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	7.84	30	\$37.07	48%	48%	\$179.28	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	Existing	9.29	30	\$37.07	48%	48%	\$179.28	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.70	30	\$37.07	48%	48%	\$179.28	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	Existing	136.46	5	\$267.96	18%	75%	\$448.81	382.64	369.62	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.75	15	\$0.05	5%	15%	\$7.94	103.15	100.97	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.46	14	\$5.25	3%	75%	\$1,379.11	60.98	59.27	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.43	18	\$0.26	15%	20%	\$62.59	32.31	31.08	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	311.21	15	\$189.00	13%	25%	\$69.38	39.37	37.25	VENT_PMSM-Ventilation-AEG-2016-2
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	112.15	15	\$1,273.23	13%	50%	\$1,297.12	44.59	42.19	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.26	15	\$0.18	13%	50%	\$78.36	156.72	148.27	FAN_VSD-Ventilation-MIDATL-v3.0-13
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.03	15	\$0.23	10%	44%	\$1,027.04	13.95	13.20	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.95	15	\$0.76	3%	15%	\$46.62	27.90	27.12	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.94	15	\$0.76	3%	15%	\$46.62	170.66	161.47	HVAC_DOAS-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	8,247.01	15	\$7,501.21	15%	15%	\$50.97	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,041.22	15	\$7,501.21	15%	15%	\$50.97	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	17.40	16.79	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	Existing	211.05	15	\$410.87	15%	45%	\$226.22	386.85	376.46	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	Existing	200.62	15	\$698.92	15%	75%	\$404.83	712.13	695.98	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	353.47	20	\$685.47	15%	75%	\$134.24	43.60	45.22	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	190.84	20	\$685.47	15%	75%	\$134.24	5.77	5.45	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.05	5	\$0.75	30%	40%	\$89.35	133.01	130.75	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$89.35	14.31	14.00	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.30	5	\$0.75	30%	40%	\$89.35	44.81	43.11	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	133.43	10	\$8.63	25%	65%	\$9.27	107.36	103.17	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	146.62	10	\$17.56	25%	65%	(\$109.29)	58.99	56.68	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	36.33	10	\$16.82	25%	65%	(\$148.27)	14.44	13.87	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	0%	0%	\$8.17	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	513.45	15	\$15.38	16%	75%	\$3.49	251.62	241.81	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	546.87	4	\$75.87	25%	40%	(\$106.09)	162.97	156.62	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	136.76	131.43	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.12	20	\$258.33	1%	30%	\$2,020.20	435.39	418.42	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.69	15	\$0.36	3%	23%	\$63.27	265.03	268.50	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.97	15	\$0.60	3%	23%	\$74.57	371.04	375.90	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	113.12	15	\$56.14	1%	3%	\$65.10	8.77	9.50	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.28	15	\$65.99	1%	3%	\$162.47	0.33	0.36	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,074.76	11	\$26.48	15%	30%	\$1.22	69.11	68.81	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	314.85	16	\$1,864.95	5%	15%	\$687.62	47.18	46.97	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.67	9	\$0.65	15%	25%	\$62.70	176.75	179.75	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	94.90	8	\$56.85	15%	25%	\$104.53	93.94	95.54	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	118.66	7	\$3,486.31	15%	30%	\$5,626.78	176.20	179.20	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	112.95	12	\$50.74	11%	75%	\$59.89	21.05	20.31	RFG_ASH-Refrigeration-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	89.56	4	\$24.51	5%	35%	\$109.58	30.92	46.62	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	128.72	15	\$347.21	0%	0%	\$385.21	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	149.57	2	\$10.74	11%	75%	\$53.20	279.72	440.08	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	3.04	15	\$508.61	6%	38%	\$9,999.00	693.21	816.66	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	53.31	15	\$5,552.98	6%	38%	\$9,999.00	1,013.91	1,194.47	RFG_HECOMP-Refrigeration-AEO15-4
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	404.29	15	\$305.13	11%	75%	\$237.04	615.14	724.68	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,619.06	15	\$539.09	6%	38%	\$47.55	923.80	1,088.31	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	3,401.68	10	\$449.00	0%	0%	\$23.17	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	297.72	16	\$153.90	11%	75%	\$83.91	75.03	109.48	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	107.07	15	\$135.00	6%	38%	\$211.14	3.37	4.92	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	2,562.08	16	\$105.92	11%	75%	\$6.91	585.38	892.25	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,972.32	10	\$521.11	11%	75%	\$55.98	450.64	686.87	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	479.69	8	\$18,135.52	5%	35%	\$9,448.49	14.95	23.52	RFG_ADC-Refrigeration-PGE-R6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	689.18	12	\$605.15	5%	35%	\$141.11	367.01	432.37	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	50.42	8	\$15.90	0%	0%	\$53.21	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	5.19	8	\$3.87	0%	0%	\$125.64	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	18.27	5	\$49.37	0%	0%	\$631.31	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,389.09	5	\$288.64	25%	75%	\$48.68	414.98	402.49	VEND_CTRL-Miscellaneous-SCE-17R0-44
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	5,083.12	18	\$8,815.42	25%	50%	\$182.12	76.77	73.86	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	490.16	15	\$335.00	0%	0%	\$59.76	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	199.03	15	\$335.00	0%	0%	\$59.76	0.00	0.00	AEG - BEST
Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	24.30	4	\$37.32	10%	50%	\$352.17	42.09	31.96	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.07	5	\$0.01	0%	0%	\$16.93	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$3.91	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$3.91	0.00	0.00	com-datacenters-7p_v5p.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$3.91	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.01	6	\$0.00	0%	0%	\$22.70	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	678.69	18	\$4,231.40	0%	0%	\$654.74	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.04	10	\$1.85	0%	0%	\$6,846.15	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	136.63	7	\$423.28	0%	0%	(\$662.89)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$662.89)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$662.89)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	21,467.06	15	\$1,114.41	0%	0%	\$53.08	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$53.08	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,509.74	6	\$37.07	1%	3%	\$4.80	18.71	17.92	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.08	20	\$0.78	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Restaurant	Cooling	Advanced New Construction Designs	sqft	Existing	1.54	25	\$4.24	0%	0%	\$55.11	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	Existing	1.16	25	\$4.24	0%	0%	\$55.11	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	Existing	0.55	25	\$4.24	0%	0%	\$55.11	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	Existing	2.19	25	\$4.24	0%	0%	\$55.11	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.82	25	\$4.24	0%	0%	\$55.11	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.24	0%	0%	\$55.11	0.00	0.00	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	Existing	0.33	3	\$0.14	0%	0%	\$28.17	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.14	0%	0%	\$28.17	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.14	0%	0%	\$28.17	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	Existing	0.36	3	\$0.14	0%	0%	\$28.17	0.00	0.00	COM_SEM-Water Heating-AEG-1
Restaurant	Interior Lighting	Strategic Energy Management	sqft	Existing	0.30	3	\$0.14	0%	0%	\$28.17	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.12	3	\$0.14	0%	0%	\$28.17	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	Existing	0.39	3	\$0.14	0%	0%	\$28.17	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.14	0%	0%	\$28.17	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	Existing	0.45	3	\$1.40	0%	0%	\$223.44	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	Existing	0.26	3	\$1.40	0%	0%	\$223.44	0.00	0.00	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	Existing	0.13	3	\$1.40	0%	0%	\$223.44	0.00	0.00	COM_CX-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Water Heating	Commissioning	sqft	Existing	0.16	3	\$1.40	0%	0%	\$223.44	0.00	0.00	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	Existing	0.35	3	\$1.40	0%	0%	\$223.44	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	Existing	0.14	3	\$1.40	0%	0%	\$223.44	0.00	0.00	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	Existing	0.90	3	\$1.40	0%	0%	\$223.44	0.00	0.00	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	Existing	0.45	3	\$0.44	24%	79%	\$70.92	340.39	333.20	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	Existing	0.26	3	\$0.44	24%	79%	\$70.92	36.62	35.60	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	Existing	0.13	3	\$0.44	24%	79%	\$70.92	114.68	108.50	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	Existing	0.16	3	\$0.44	24%	79%	\$70.92	82.58	79.36	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	Existing	0.35	3	\$0.44	24%	79%	\$70.92	252.72	269.79	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	Existing	0.14	3	\$0.44	24%	79%	\$70.92	110.65	112.53	COM_RCX-Lighting-AEG-1
Restaurant	Refrigeration	Retrocommissioning	sqft	Existing	0.90	3	\$0.44	24%	79%	\$70.92	565.06	665.69	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.24	10	\$0.09	0%	0%	\$58.02	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	2.76	10	\$1.12	0%	0%	\$71.34	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.72	3	\$0.24	0%	0%	\$141.05	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	1.34	10	\$3.24	0%	0%	\$423.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.27	10	\$0.70	0%	0%	\$459.01	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	Existing	201.67	16	\$75.53	20%	75%	\$41.12	35.75	33.42	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,709.77	25	\$4,420.66	0%	0%	\$163.54	0.00	0.00	WHP Analysis
Restaurant	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$624.85	0.00	0.00	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ceiling	sqft roof	New	0.12	45	\$0.84	15%	50%	\$624.85	3.04	2.95	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$624.85	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.86	15%	50%	\$397.09	7.49	7.28	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$397.09	0.00	0.00	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$397.09	0.00	0.00	Building Energy Simulation Tool
Restaurant	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.04	20	\$0.81	45%	50%	\$9,999.00	0.86	0.84	Building Energy Simulation Tool
Restaurant	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$9,999.00	-0.16	-0.15	Building Energy Simulation Tool
Restaurant	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$9,999.00	-0.43	-0.42	Building Energy Simulation Tool
Restaurant	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$1.70	15%	50%	\$2,868.88	-2.12	-2.06	Building Energy Simulation Tool
Restaurant	Heating	Insulation - Wall Cavity	sqft wall	New	0.05	45	\$1.70	15%	50%	\$2,868.88	0.82	0.80	Building Energy Simulation Tool
Restaurant	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.02	45	\$1.70	15%	50%	\$2,868.88	2.28	2.22	Building Energy Simulation Tool
Restaurant	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.33	18	\$0.59	15%	35%	\$9,999.00	0.14	0.14	Building Energy Simulation Tool

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Restaurant	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-3.59	18	\$0.59	15%	35%	\$9,999.00	-0.30	-0.29	Building Energy Simulation Tool
Restaurant	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.67	18	\$0.59	15%	35%	\$9,999.00	-0.83	-0.80	Building Energy Simulation Tool
Restaurant	Cooling	Windows - High Efficiency Glazing	sqft window	New	5.63	30	\$37.07	66%	66%	\$201.20	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Restaurant	Heating	Windows - High Efficiency Glazing	sqft window	New	9.10	30	\$37.07	66%	66%	\$201.20	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Restaurant	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.44	30	\$37.07	66%	66%	\$201.20	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Restaurant	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Restaurant	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Restaurant	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Restaurant	Cooling	HVAC - Economizer	HP cool	New	96.56	5	\$267.96	18%	75%	\$625.40	21.43	20.12	AEG-BEST
Restaurant	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.54	15	\$0.05	10%	15%	\$10.75	6.30	5.98	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Restaurant	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.45	14	\$5.25	6%	75%	\$1,361.82	9.50	8.97	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.39	18	\$0.26	15%	20%	\$68.96	8.39	8.14	RES_HRV-Cooling-7PLN-v1-2
Restaurant	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	305.65	15	\$189.00	19%	25%	\$70.04	2.76	2.61	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	110.14	15	\$1,273.23	19%	50%	\$1,309.29	5.49	5.19	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Restaurant	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.24	15	\$0.17	19%	50%	\$79.10	19.29	18.23	AEG-BEST
Restaurant	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	44%	\$1,131.45	2.06	1.95	VENT_DCV-Ventilation-7PLN-v5-5
Restaurant	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.03	15	\$0.76	3%	15%	\$59.00	5.17	4.89	HVAC_DOAS-Heating-7PLN-v5-25
Restaurant	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.43	15	\$0.76	3%	15%	\$59.00	12.85	12.14	HVAC_DOAS-Heating-7PLN-v5-1
Restaurant	Cooling	Destratification Fans (HVLS)	Strat Fan	New	5,920.88	15	\$7,501.21	15%	15%	\$57.79	0.00	0.00	HVLS-Cooling-AEG-1
Restaurant	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,859.34	15	\$7,501.21	15%	15%	\$57.79	0.00	0.00	HVLS-Heating-AEG-1
Restaurant	Cooling	RTU - Maintenance	tonCool	New	6.15	3	\$33.20	15%	45%	\$1,839.83	0.46	0.43	RTU_MNT-Cooling-PGE-R2-1
Restaurant	Cooling	RTU - Advanced Controls	tonCool	New	148.29	15	\$410.87	15%	45%	\$317.48	75.81	72.95	RTU_CTRL-Cooling-RTF-1.1-1
Restaurant	Cooling	RTU - Evaporative Precooler	tonCool	New	140.96	15	\$698.92	15%	75%	\$568.13	169.44	164.39	RTU_PREC-Cooling-XCELCO-2017-18-1
Restaurant	Cooling	Ductless Mini Split Heat Pump	tonCool	New	255.00	20	\$685.47	15%	75%	\$148.57	7.68	7.29	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Heating	Ductless Mini Split Heat Pump	tonCool	New	204.95	20	\$685.47	15%	75%	\$148.57	1.27	1.21	DHP-Cooling/Heating-7PLN-v2-1
Restaurant	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.75	5	\$0.75	30%	40%	\$105.15	9.27	8.84	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.58	5	\$0.75	30%	40%	\$105.15	1.37	1.30	STAT_WIFI-AII-7PLN-v2-1
Restaurant	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.27	5	\$0.75	30%	40%	\$105.15	3.80	3.61	STAT_WIFI-AII-7PLN-v2-1

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Restaurant	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	126.97	10	\$8.63	25%	65%	\$9.46	11.57	10.83	DHW_AER-Water Heating-ILTRM-v4.0-1
Restaurant	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	139.52	10	\$17.56	25%	65%	(\$111.58)	6.35	5.95	DHW_SHW-Water Heating-RTF-v3.1-4
Restaurant	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	34.57	10	\$16.82	25%	65%	(\$151.37)	1.86	1.75	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Restaurant	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	0%	0%	\$8.34	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Restaurant	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	488.58	15	\$15.38	1%	75%	\$3.57	50.48	47.70	AEG-BEST
Restaurant	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	520.39	4	\$75.87	25%	40%	(\$108.30)	10.27	9.55	DHW_SPR-Water Heating-RTF-v2.4-1
Restaurant	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	4.59	4.26	DHW_STBK-Water Heating-ILTRM-v4.0-4
Restaurant	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,062.38	71.80	67.93	AEG-BEST
Restaurant	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.63	15	\$0.36	11%	23%	\$66.48	87.57	86.56	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.88	15	\$0.60	11%	23%	\$78.35	122.60	121.19	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Restaurant	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	103.51	15	\$56.14	1%	3%	\$68.03	1.19	1.19	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.36	15	\$65.99	1%	3%	\$158.11	0.04	0.04	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Restaurant	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Restaurant	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,834.08	11	\$26.48	15%	30%	\$1.26	9.45	9.03	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Restaurant	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	290.21	16	\$1,864.95	5%	15%	\$710.48	7.77	7.46	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Restaurant	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.53	9	\$0.65	15%	25%	\$65.30	21.10	20.44	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Restaurant	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	87.13	8	\$56.85	15%	25%	\$108.85	10.36	10.03	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Restaurant	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	108.95	7	\$3,486.31	15%	30%	\$5,859.83	17.57	17.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Restaurant	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	105.87	12	\$50.74	11%	75%	\$61.09	3.03	2.85	RFG_ASH-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	76.62	4	\$24.51	5%	35%	\$126.45	1.93	2.50	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Restaurant	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	115.35	15	\$347.21	0%	0%	\$412.82	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	126.26	2	\$10.74	11%	75%	\$62.61	9.24	12.96	RFG_STR-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	2.72	15	\$508.61	6%	38%	\$9,999.00	111.77	115.12	RFG_HECOMP-Refrigeration-AEO17-3
Restaurant	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	47.77	15	\$5,552.98	6%	38%	\$9,999.00	163.47	168.39	RFG_HECOMP-Refrigeration-AEO17-5
Restaurant	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	362.30	15	\$305.13	11%	75%	\$254.03	99.18	102.16	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Restaurant	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,450.93	15	\$539.09	6%	38%	\$50.96	148.94	153.42	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Restaurant	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	3,048.42	10	\$449.00	0%	0%	\$24.83	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	255.95	16	\$153.90	11%	75%	\$95.90	12.30	14.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Restaurant	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	92.04	15	\$135.00	6%	38%	\$241.30	0.54	0.62	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Restaurant	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	2,188.39	16	\$105.92	11%	75%	\$8.00	95.80	111.46	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Restaurant	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,684.64	10	\$521.11	11%	75%	\$64.81	57.71	69.80	RFG_DDEF-Refrigeration-VTTRM-1
Restaurant	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	14.46	8	\$647.70	5%	35%	\$9,999.00	1.63	2.06	RFG_ASH-Refrigeration-NMTRM-2016-1
Restaurant	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	617.61	12	\$5,648.09	5%	35%	\$1,411.41	52.90	54.82	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Restaurant	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	47.44	8	\$15.90	0%	0%	\$53.95	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Restaurant	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	4.89	8	\$3.87	0%	0%	\$127.40	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Restaurant	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	17.06	5	\$49.37	0%	0%	\$644.78	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Restaurant	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,291.17	5	\$288.64	25%	75%	\$49.81	31.91	29.75	VEND_CTRL-Miscellaneous-SCE-17R0-41
Restaurant	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	4,574.12	18	\$8,815.42	25%	50%	\$200.64	19.94	19.34	COOK_EXHD-Food Preparation-7PLN-v3-10
Restaurant	Cooling	Lodging - Guest Room Controls	LodgUnit	New	356.12	15	\$335.00	0%	0%	\$69.19	0.00	0.00	AEG - BEST
Restaurant	Heating	Lodging - Guest Room Controls	LodgUnit	New	192.35	15	\$335.00	0%	0%	\$69.19	0.00	0.00	AEG - BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Restaurant	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	23.50	4	\$37.32	10%	50%	\$374.66	2.43	1.89	SMARTSTRIP-Electronics-RTF-v3.2-1
Restaurant	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Restaurant	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.07	5	\$0.01	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$3.65	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$3.65	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$3.65	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.01	6	\$0.00	0%	0%	\$12.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
Restaurant	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	610.73	18	\$4,231.40	0%	0%	\$721.30	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Restaurant	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Restaurant	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Restaurant	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$6,932.43	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Restaurant	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.04	10	\$1.71	0%	0%	\$6,465.04	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Restaurant	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	130.01	7	\$423.28	0%	0%	(\$676.73)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$676.73)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Restaurant	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$676.73)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Restaurant	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	20,427.34	15	\$1,114.41	0%	0%	\$54.18	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$54.18	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Restaurant	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,503.03	6	\$37.07	1%	3%	\$4.82	2.58	2.48	ESTAR_WC-Miscellaneous-7PLN-v6-1
Restaurant	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.08	20	\$0.70	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Restaurant	Cooling	Advanced New Construction Designs	sqft	New	1.51	25	\$4.24	10%	25%	\$53.42	70.04	68.20	ADVNC-AII-RSRCH-1
Restaurant	Heating	Advanced New Construction Designs	sqft	New	1.17	25	\$4.24	10%	25%	\$53.42	10.32	10.04	ADVNC-AII-RSRCH-1
Restaurant	Ventilation	Advanced New Construction Designs	sqft	New	0.54	25	\$4.24	10%	25%	\$53.42	28.74	27.94	ADVNC-AII-RSRCH-1
Restaurant	Water Heating	Advanced New Construction Designs	sqft	New	2.21	25	\$4.24	10%	25%	\$53.42	67.54	65.67	ADVNC-AII-RSRCH-1
Restaurant	Interior Lighting	Advanced New Construction Designs	sqft	New	1.79	25	\$4.24	10%	25%	\$53.42	327.58	325.31	ADVNC-AII-RSRCH-1
Restaurant	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.72	25	\$4.24	10%	25%	\$53.42	107.13	105.52	ADVNC-AII-RSRCH-1
Restaurant	Cooling	Strategic Energy Management	sqft	New	0.23	3	\$0.11	0%	0%	\$24.50	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Heating	Strategic Energy Management	sqft	New	0.18	3	\$0.11	0%	0%	\$24.50	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Ventilation	Strategic Energy Management	sqft	New	0.08	3	\$0.11	0%	0%	\$24.50	0.00	0.00	COM_SEM-HVAC-AEG-1
Restaurant	Water Heating	Strategic Energy Management	sqft	New	0.34	3	\$0.11	0%	0%	\$24.50	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Restaurant	Interior Lighting	Strategic Energy Management	sqft	New	0.28	3	\$0.11	0%	0%	\$24.50	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Exterior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.11	0%	0%	\$24.50	0.00	0.00	COM_SEM-Lighting-AEG-1
Restaurant	Refrigeration	Strategic Energy Management	sqft	New	0.35	3	\$0.11	0%	0%	\$24.50	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Restaurant	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.11	0%	0%	\$24.50	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Restaurant	Cooling	Commissioning	sqft	New	0.32	3	\$1.07	24%	79%	\$187.88	82.19	79.26	COM_CX-HVAC-AEG-1
Restaurant	Heating	Commissioning	sqft	New	0.25	3	\$1.07	24%	79%	\$187.88	12.11	11.65	COM_CX-HVAC-AEG-1
Restaurant	Ventilation	Commissioning	sqft	New	0.12	3	\$1.07	24%	79%	\$187.88	33.72	32.43	COM_CX-HVAC-AEG-1
Restaurant	Water Heating	Commissioning	sqft	New	0.16	3	\$1.07	24%	79%	\$187.88	26.42	25.41	COM_CX-Water Heating-AEG-1
Restaurant	Interior Lighting	Commissioning	sqft	New	0.32	3	\$1.07	24%	79%	\$187.88	320.33	318.53	COM_CX-Lighting-AEG-1
Restaurant	Exterior Lighting	Commissioning	sqft	New	0.13	3	\$1.07	24%	79%	\$187.88	104.76	102.67	COM_CX-Lighting-AEG-1
Restaurant	Refrigeration	Commissioning	sqft	New	0.80	3	\$1.07	24%	79%	\$187.88	514.84	519.84	COM_CX-Refrigeration-AEG-1
Restaurant	Cooling	Retrocommissioning	sqft	New	0.32	3	\$0.34	0%	0%	\$59.64	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Heating	Retrocommissioning	sqft	New	0.25	3	\$0.34	0%	0%	\$59.64	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Ventilation	Retrocommissioning	sqft	New	0.12	3	\$0.34	0%	0%	\$59.64	0.00	0.00	COM_RCX-HVAC-AEG-1
Restaurant	Water Heating	Retrocommissioning	sqft	New	0.16	3	\$0.34	0%	0%	\$59.64	0.00	0.00	COM_RCX-Water Heating-AEG-1
Restaurant	Interior Lighting	Retrocommissioning	sqft	New	0.32	3	\$0.34	0%	0%	\$59.64	0.00	0.00	COM_RCX-Lighting-AEG-1
Restaurant	Exterior Lighting	Retrocommissioning	sqft	New	0.13	3	\$0.34	0%	0%	\$59.64	0.00	0.00	COM_RCX-Lighting-AEG-1

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Restaurant	Refrigeration	Retrocommissioning	sqft	New	0.80	3	\$0.34	0%	0%	\$59.64	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Restaurant	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.22	10	\$0.09	0%	0%	\$60.64	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	2.48	10	\$1.12	0%	0%	\$76.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.64	3	\$0.24	0%	0%	\$151.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	1.20	10	\$3.24	0%	0%	\$453.32	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.24	10	\$0.70	0%	0%	\$491.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Restaurant	Miscellaneous	LED Signage	perBldg	New	200.78	16	\$75.53	20%	75%	\$41.31	5.07	4.79	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Restaurant	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,909.43	25	\$4,436.36	0%	0%	\$148.57	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	Existing	0.58	45	\$0.84	15%	35%	\$130.39	99.90	97.98	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$130.39	0.02	0.02	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$130.39	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.77	20	\$0.81	45%	50%	\$190.39	33.30	32.66	Building Energy Simulation Tool

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Grocery	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.23	20	\$0.81	45%	50%	\$190.39	-1.85	-1.80	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.81	45%	50%	\$190.39	-5.49	-5.29	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	Existing	1.36	45	\$1.70	15%	35%	\$93.38	133.20	130.64	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.18	45	\$1.70	15%	35%	\$93.38	3.32	3.24	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.08	45	\$1.70	15%	35%	\$93.38	9.88	9.52	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	3.00	18	\$0.59	15%	25%	\$19.65	0.86	0.85	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.15	18	\$0.59	15%	25%	\$19.65	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.07	18	\$0.59	15%	25%	\$19.65	0.02	0.02	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.11	30	\$37.07	48%	48%	\$270.75	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	Existing	6.34	30	\$37.07	48%	48%	\$270.75	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.62	30	\$37.07	48%	48%	\$270.75	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,937.87	10	\$914.46	15%	75%	\$18.49	0.74	0.70	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	657.57	15	\$248.07	15%	75%	\$43.06	9.72	9.19	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,647.15	15	\$263.92	15%	75%	\$18.29	2.44	2.30	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	51.13	15	\$248.07	15%	75%	\$549.60	0.29	0.27	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	55,234.5 ₂	10	\$1,796.53	15%	75%	\$13.47	2.27	2.12	AEG-BEST

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Grocery	Cooling	HVAC - Economizer	HP cool	Existing	238.27	5	\$267.96	18%	75%	\$256.99	281.40	271.75	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.77	15	\$0.05	5%	15%	\$7.73	72.50	70.70	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	2.89	14	\$5.25	3%	75%	\$219.32	44.15	42.67	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.41	18	\$0.26	15%	20%	\$66.25	22.03	21.21	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	495.65	15	\$189.00	13%	25%	\$43.62	27.09	25.67	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	178.61	15	\$1,273.23	13%	50%	\$815.38	30.69	29.08	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.25	15	\$0.11	13%	50%	\$49.26	107.84	102.18	FAN_VSD-Ventilation-MIDATL-v3.0-13
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	1%	34%	\$1,087.07	9.25	8.77	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.02	15	\$0.76	0%	11%	\$46.11	19.47	18.82	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.89	15	\$0.76	0%	11%	\$46.11	113.19	107.25	HVAC_DOAS-Heating-7PLN-v5-1
Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	8,443.17	15	\$7,501.21	15%	15%	\$48.36	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	9,694.40	15	\$7,501.21	15%	15%	\$48.36	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	7.25	7.00	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	Existing	368.88	15	\$410.87	15%	45%	\$129.43	278.92	271.42	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	Existing	350.65	15	\$698.92	15%	75%	\$231.62	511.34	499.71	RTU_PREC-Cooling-XCELCO-2017-18-1

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Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	617.82	20	\$1,175.09	15%	25%	\$125.06	4.30	4.46	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	380.58	20	\$1,175.09	15%	25%	\$125.06	1.73	1.63	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.07	5	\$0.75	30%	40%	\$86.77	92.61	90.83	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.64	5	\$0.75	30%	40%	\$86.77	10.27	10.01	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	30%	40%	\$86.77	30.55	29.41	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	123.11	10	\$8.63	25%	65%	\$10.05	21.47	20.63	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	135.27	10	\$17.56	25%	65%	(\$118.46)	11.80	11.34	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	33.52	10	\$16.82	25%	65%	(\$160.70)	2.88	2.77	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	0%	0%	\$8.17	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	473.60	15	\$15.38	16%	75%	\$3.79	50.23	48.27	AEG-BEST
Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	504.56	4	\$75.87	25%	40%	(\$114.99)	32.54	31.27	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	27.31	26.24	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.13	20	\$258.33	1%	30%	\$2,019.73	86.96	83.57	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.02	15	\$0.36	3%	23%	\$42.41	291.26	288.98	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.42	15	\$0.60	3%	23%	\$49.98	407.77	404.57	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	448.99	15	\$56.14	1%	3%	\$15.34	7.72	7.83	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.31	15	\$65.99	1%	3%	\$151.91	0.26	0.27	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	8,250.07	11	\$26.48	15%	30%	\$0.46	134.95	134.59	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	844.79	16	\$1,864.95	5%	15%	\$256.41	92.13	91.88	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.21	9	\$0.65	15%	25%	\$88.60	111.82	114.75	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	92.69	8	\$56.85	15%	25%	\$109.95	59.43	60.99	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	115.90	7	\$3,486.31	15%	30%	\$5,919.04	111.47	114.39	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	295.84	12	\$50.74	33%	75%	\$22.86	403.55	389.34	RFG_ASH-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	18.10	4	\$3.68	27%	35%	\$59.94	9.16	9.41	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	709.63	15	\$347.21	23%	75%	\$58.72	4,196.99	4,100.25	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	137.11	2	\$10.74	33%	75%	\$58.03	22.23	35.02	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	16.74	15	\$508.61	16%	38%	\$5,766.55	1,148.70	1,122.23	RFG_HECOMP-Refrigeration-AEO15-4
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	293.89	15	\$5,552.98	16%	38%	\$3,920.82	1,680.13	1,641.40	RFG_HECOMP-Refrigeration-AEO15-4

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Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	742.94	15	\$305.13	33%	75%	\$108.39	1,019.34	995.84	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	1,338.87	15	\$539.09	16%	38%	\$48.32	1,530.81	1,495.53	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	2,813.00	10	\$449.00	15%	30%	\$23.55	2,270.31	2,217.98	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	284.96	16	\$153.90	33%	75%	\$62.86	275.37	269.16	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	102.48	15	\$135.00	16%	38%	\$158.16	12.38	12.10	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	240.95	16	\$105.92	33%	75%	\$66.65	72.19	95.76	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	185.49	10	\$521.11	33%	75%	\$540.12	55.57	73.72	RFG_DDEF-Refrigeration-VTTRM-1
Grocery	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	1,319.23	8	\$54,406.57	27%	35%	\$9,999.00	0.51	0.80	RFG_ADC-Refrigeration-PGE-R6-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	569.91	12	\$605.15	27%	35%	\$143.39	260.65	254.64	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	59.42	8	\$15.90	20%	75%	\$45.14	560.26	541.62	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	13.61	8	\$3.87	20%	75%	\$47.97	48.11	46.51	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	47.85	5	\$49.37	20%	75%	\$241.03	21.14	20.44	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	997.48	5	\$288.64	25%	75%	\$67.80	47.72	46.28	VEND_CTRL-Miscellaneous-SCE-17R0-32
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	4,808.00	18	\$8,815.42	25%	50%	\$192.77	52.34	50.39	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	499.75	15	\$335.00	0%	0%	\$54.30	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	251.03	15	\$335.00	0%	0%	\$54.30	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.71	4	\$37.32	10%	50%	\$715.63	14.42	11.81	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$4.99	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.99	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.99	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$78.82	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,334.39	18	\$4,231.40	0%	0%	\$190.58	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Grocery	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.99	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	126.06	7	\$423.28	0%	0%	(\$718.48)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$718.48)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$718.48)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	19,806.06	15	\$1,114.41	0%	0%	\$57.53	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$57.53	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,247.25	6	\$37.07	1%	3%	\$5.81	3.07	2.94	ESTAR_WC-Miscellaneous-7PLN-v6-1
Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.22	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	Existing	1.87	25	\$4.24	0%	0%	\$60.93	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	Existing	1.25	25	\$4.24	0%	0%	\$60.93	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	Existing	0.85	25	\$4.24	0%	0%	\$60.93	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	Existing	0.55	25	\$4.24	0%	0%	\$60.93	0.00	0.00	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.95	25	\$4.24	0%	0%	\$60.93	0.00	0.00	ADVNC-AII-RSRCH-1

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Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.63	25	\$4.24	0%	0%	\$60.93	0.00	0.00	ADVNC-All-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	Existing	0.33	3	\$0.20	4%	27%	\$32.68	72.25	70.47	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	Existing	0.20	3	\$0.20	4%	27%	\$32.68	8.01	7.74	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	Existing	0.09	3	\$0.20	4%	27%	\$32.68	23.83	22.58	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.20	4%	27%	\$32.68	14.94	14.36	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	Existing	0.33	3	\$0.20	4%	27%	\$32.68	80.45	81.18	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.20	4%	27%	\$32.68	25.37	26.03	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	Existing	1.00	3	\$0.20	4%	27%	\$32.68	254.52	248.65	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.20	4%	27%	\$32.68	5.43	4.45	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	Existing	0.46	3	\$1.25	0%	0%	\$119.19	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	Existing	0.27	3	\$1.25	0%	0%	\$119.19	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Ventilation	Commissioning	sqft	Existing	0.12	3	\$1.25	0%	0%	\$119.19	0.00	0.00	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	Existing	0.04	3	\$1.25	0%	0%	\$119.19	0.00	0.00	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	Existing	0.38	3	\$1.25	0%	0%	\$119.19	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	Existing	0.12	3	\$1.25	0%	0%	\$119.19	0.00	0.00	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	Existing	2.31	3	\$1.25	0%	0%	\$119.19	0.00	0.00	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	Existing	0.46	3	\$0.40	10%	61%	\$37.83	221.84	216.36	COM_RCX-HVAC-AEG-1

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Grocery	Heating	Retrocommissioning	sqft	Existing	0.27	3	\$0.40	10%	61%	\$37.83	24.59	23.76	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	Existing	0.12	3	\$0.40	10%	61%	\$37.83	73.17	69.33	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.40	10%	61%	\$37.83	15.29	14.69	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	Existing	0.38	3	\$0.40	10%	61%	\$37.83	205.82	207.70	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	Existing	0.12	3	\$0.40	10%	61%	\$37.83	64.91	66.61	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	Existing	2.31	3	\$0.40	10%	61%	\$37.83	1,302.39	1,272.37	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.27	10	\$0.09	0%	0%	\$49.73	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	7.13	10	\$1.12	0%	0%	\$23.24	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.85	3	\$0.24	0%	0%	\$45.95	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	3.46	10	\$3.24	0%	0%	\$137.79	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.69	10	\$0.70	0%	0%	\$149.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	Existing	205.01	16	\$75.53	20%	75%	\$40.45	7.30	6.82	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,107.87	25	\$3,438.72	0%	0%	\$163.54	0.00	0.00	WHP Analysis
Grocery	Cooling	Insulation - Ceiling	sqft roof	New	0.10	45	\$0.84	15%	50%	\$653.50	10.10	9.82	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ceiling	sqft roof	New	0.01	45	\$0.84	15%	50%	\$653.50	0.27	0.26	Building Energy Simulation Tool

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Grocery	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$653.50	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Grocery	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.66	20	\$0.81	45%	50%	\$144.47	9.63	9.35	Building Energy Simulation Tool
Grocery	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$144.47	-0.15	-0.15	Building Energy Simulation Tool
Grocery	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$144.47	-0.67	-0.65	Building Energy Simulation Tool
Grocery	Cooling	Insulation - Wall Cavity	sqft wall	New	0.11	45	\$1.70	15%	50%	\$1,229.12	8.17	7.94	Building Energy Simulation Tool
Grocery	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$1,229.12	0.12	0.12	Building Energy Simulation Tool
Grocery	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$1,229.12	0.54	0.52	Building Energy Simulation Tool
Grocery	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	-6.63	18	\$0.59	15%	25%	\$9,999.00	-0.63	-0.61	Building Energy Simulation Tool
Grocery	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.36	18	\$0.59	15%	25%	\$9,999.00	0.01	0.01	Building Energy Simulation Tool
Grocery	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.24	18	\$0.59	15%	25%	\$9,999.00	0.03	0.03	Building Energy Simulation Tool
Grocery	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.29	30	\$37.07	66%	66%	\$350.98	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Grocery	Heating	Windows - High Efficiency Glazing	sqft window	New	4.72	30	\$37.07	66%	66%	\$350.98	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Grocery	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.83	30	\$37.07	66%	66%	\$350.98	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Grocery	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,657.37	10	\$914.46	15%	75%	\$22.51	0.09	0.08	AEG-BEST
Grocery	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	536.20	15	\$248.07	15%	75%	\$52.41	1.44	1.36	AEG-BEST
Grocery	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,343.14	15	\$263.92	15%	75%	\$22.26	0.36	0.34	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Grocery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	40.87	15	\$248.07	15%	75%	\$687.56	0.04	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Grocery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	43,729.21	10	\$1,796.53	15%	75%	\$17.02	0.26	0.24	AEG-BEST
Grocery	Cooling	HVAC - Economizer	HP cool	New	203.52	5	\$267.96	18%	75%	\$296.67	21.15	19.85	AEG-BEST
Grocery	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.66	15	\$0.05	10%	15%	\$8.86	5.80	5.51	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Grocery	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.85	14	\$5.25	6%	75%	\$216.61	7.61	7.19	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.60	18	\$0.26	15%	20%	\$44.31	10.48	10.16	RES_HRV-Cooling-7PLN-v1-2
Grocery	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	491.08	15	\$189.00	19%	25%	\$43.59	3.48	3.29	VENT_PMSM-Ventilation-AEG-2016-2
Grocery	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	176.96	15	\$1,273.23	19%	50%	\$814.99	6.92	6.54	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Grocery	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.37	15	\$0.16	19%	50%	\$49.23	24.31	22.97	AEG-BEST
Grocery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.04	15	\$0.23	1%	34%	\$726.98	2.50	2.37	VENT_DCV-Ventilation-7PLN-v5-5
Grocery	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.11	15	\$0.76	0%	11%	\$35.56	3.99	3.78	HVAC_DOAS-Heating-7PLN-v5-25
Grocery	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.31	15	\$0.76	0%	11%	\$35.56	30.63	28.95	HVAC_DOAS-Heating-7PLN-v5-1

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Grocery	Cooling	Destratification Fans (HVLS)	Strat Fan	New	7,188.31	15	\$7,501.21	15%	15%	\$51.05	0.00	0.00	HVLS-Cooling-AEG-1
Grocery	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,550.57	15	\$7,501.21	15%	15%	\$51.05	0.00	0.00	HVLS-Heating-AEG-1
Grocery	Cooling	RTU - Maintenance	tonCool	New	7.42	3	\$33.20	15%	45%	\$1,523.34	0.26	0.25	RTU_MNT-Cooling-PGE-R2-1
Grocery	Cooling	RTU - Advanced Controls	tonCool	New	313.02	15	\$410.87	15%	45%	\$150.39	73.49	70.72	RTU_CTRL-Cooling-RTF-1.1-1
Grocery	Cooling	RTU - Evaporative Precooler	tonCool	New	297.55	15	\$698.92	15%	75%	\$269.13	163.79	158.90	RTU_PREC-Cooling-XCELCO-2017-18-1
Grocery	Cooling	Ductless Mini Split Heat Pump	tonCool	New	445.70	20	\$1,175.09	15%	25%	\$155.78	0.84	0.80	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Heating	Ductless Mini Split Heat Pump	tonCool	New	306.28	20	\$1,175.09	15%	25%	\$155.78	0.32	0.30	DHP-Cooling/Heating-7PLN-v2-1
Grocery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.91	5	\$0.75	30%	40%	\$86.01	8.41	8.02	STAT_WIFI-All-7PLN-v2-1
Grocery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.63	5	\$0.75	30%	40%	\$86.01	1.08	1.03	STAT_WIFI-All-7PLN-v2-1
Grocery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	30%	40%	\$86.01	4.72	4.49	STAT_WIFI-All-7PLN-v2-1
Grocery	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	117.15	10	\$8.63	25%	65%	\$10.26	2.58	2.41	DHW_AER-Water Heating-ILTRM-v4.0-1
Grocery	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	128.72	10	\$17.56	25%	65%	(\$120.93)	1.42	1.33	DHW_SHW-Water Heating-RTF-v3.1-4
Grocery	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	31.90	10	\$16.82	25%	65%	(\$164.06)	0.41	0.39	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Grocery	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	0%	0%	\$8.34	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Grocery	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	450.66	15	\$15.38	1%	75%	\$3.87	11.19	10.58	AEG-BEST

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Grocery	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	480.12	4	\$75.87	25%	40%	(\$117.39)	2.28	2.12	DHW_SPR-Water Heating-RTF-v2.4-1
Grocery	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	1.02	0.95	DHW_STBK-Water Heating-ILTRM-v4.0-4
Grocery	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,061.90	15.92	15.06	AEG-BEST
Grocery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.94	15	\$0.36	11%	23%	\$43.69	108.05	105.23	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.32	15	\$0.60	11%	23%	\$51.49	151.27	147.32	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Grocery	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	415.64	15	\$56.14	1%	3%	\$15.80	1.17	1.12	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.93	15	\$65.99	1%	3%	\$143.13	0.04	0.04	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Grocery	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Grocery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	7,604.28	11	\$26.48	15%	30%	\$0.47	20.50	19.63	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Grocery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	778.67	16	\$1,864.95	5%	15%	\$264.96	16.84	16.19	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Grocery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.11	9	\$0.65	15%	25%	\$92.51	14.87	14.34	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Grocery	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	84.73	8	\$56.85	15%	25%	\$114.80	7.30	7.04	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Grocery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	105.94	7	\$3,486.31	15%	30%	\$6,179.96	12.39	11.95	CLTG_EXT_PV-Exterior Lighting-AEG-2
Grocery	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	277.29	12	\$50.74	41%	75%	\$23.32	51.62	48.61	RFG_ASH-Refrigeration-7PLN-v6-1

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Grocery	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	16.76	4	\$3.68	35%	35%	\$61.80	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Grocery	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	665.61	15	\$347.21	11%	75%	\$59.71	929.29	881.95	RFG_FHPC-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	115.28	2	\$10.74	41%	75%	\$68.27	0.65	0.92	RFG_STR-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	15.71	15	\$508.61	21%	38%	\$5,863.96	165.49	157.06	RFG_HECOMP-Refrigeration-AEO17-3
Grocery	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	275.66	15	\$5,552.98	21%	38%	\$3,987.05	242.06	229.72	RFG_HECOMP-Refrigeration-AEO17-5
Grocery	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	696.86	15	\$305.13	41%	75%	\$110.22	146.86	139.37	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Grocery	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,255.83	15	\$539.09	21%	38%	\$49.14	220.54	209.31	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	2,638.53	10	\$449.00	20%	30%	\$23.94	218.99	206.75	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Grocery	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	267.22	16	\$153.90	41%	75%	\$63.93	40.68	38.64	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Grocery	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	96.10	15	\$135.00	21%	38%	\$160.86	1.78	1.69	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Grocery	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	210.05	16	\$105.92	41%	75%	\$74.00	10.56	11.47	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Grocery	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	161.70	10	\$521.11	41%	75%	\$599.72	6.37	7.09	RFG_DDEF-Refrigeration-VTTRM-1

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Grocery	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	13.20	8	\$647.70	35%	35%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Grocery	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	534.56	12	\$2,541.64	35%	35%	\$612.42	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Grocery	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	55.92	8	\$15.90	20%	75%	\$45.77	69.70	65.28	RFG_LED-Refrigeration-RTF-v1.1-6
Grocery	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	12.80	8	\$3.87	20%	75%	\$48.64	5.98	5.60	RFG_SENS-Refrigeration-7PLN-v6-1
Grocery	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	44.68	5	\$49.37	20%	75%	\$246.17	1.81	1.68	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Grocery	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	927.17	5	\$288.64	25%	75%	\$69.36	4.08	3.80	VEND_CTRL-Miscellaneous-SCE-17R0-41
Grocery	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	7,119.82	18	\$8,815.42	25%	50%	\$128.92	24.90	24.14	COOK_EXHD-Food Preparation-7PLN-v3-10
Grocery	Cooling	Lodging - Guest Room Controls	LodgUnit	New	363.10	15	\$335.00	0%	0%	\$66.26	0.00	0.00	AEG - BEST
Grocery	Heating	Lodging - Guest Room Controls	LodgUnit	New	209.58	15	\$335.00	0%	0%	\$66.26	0.00	0.00	AEG - BEST
Grocery	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	12.38	4	\$37.32	10%	50%	\$741.25	0.96	0.80	SMARTSTRIP-Electronics-RTF-v3.2-1
Grocery	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Grocery	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$4.36	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Grocery	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$4.36	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.36	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$59.89	0.00	0.00	com-datacenters-7p_v5p.xlsx
Grocery	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	3,456.83	18	\$4,231.40	0%	0%	\$127.45	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Grocery	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Grocery	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Grocery	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$25,208.82	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Grocery	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.90	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Grocery	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	119.95	7	\$423.28	0%	0%	(\$733.48)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$733.48)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$733.48)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Grocery	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	18,846.78	15	\$1,114.41	0%	0%	\$58.73	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$58.73	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Grocery	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,241.71	6	\$37.07	1%	3%	\$5.83	0.47	0.45	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Grocery	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.20	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Grocery	Cooling	Advanced New Construction Designs	sqft	New	1.84	25	\$4.24	10%	15%	\$58.99	20.91	20.36	ADVNC-AII-RSRCH-1
Grocery	Heating	Advanced New Construction Designs	sqft	New	1.26	25	\$4.24	10%	15%	\$58.99	2.68	2.61	ADVNC-AII-RSRCH-1
Grocery	Ventilation	Advanced New Construction Designs	sqft	New	0.85	25	\$4.24	10%	15%	\$58.99	11.75	11.42	ADVNC-AII-RSRCH-1
Grocery	Water Heating	Advanced New Construction Designs	sqft	New	0.56	25	\$4.24	10%	15%	\$58.99	4.86	4.72	ADVNC-AII-RSRCH-1
Grocery	Interior Lighting	Advanced New Construction Designs	sqft	New	1.98	25	\$4.24	10%	15%	\$58.99	104.34	102.36	ADVNC-AII-RSRCH-1
Grocery	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.64	25	\$4.24	10%	15%	\$58.99	24.48	24.03	ADVNC-AII-RSRCH-1
Grocery	Cooling	Strategic Energy Management	sqft	New	0.28	3	\$0.17	4%	27%	\$28.85	3.53	3.31	COM_SEM-HVAC-AEG-1
Grocery	Heating	Strategic Energy Management	sqft	New	0.20	3	\$0.17	4%	27%	\$28.85	0.45	0.42	COM_SEM-HVAC-AEG-1
Grocery	Ventilation	Strategic Energy Management	sqft	New	0.13	3	\$0.17	4%	27%	\$28.85	1.98	1.84	COM_SEM-HVAC-AEG-1
Grocery	Water Heating	Strategic Energy Management	sqft	New	0.09	3	\$0.17	4%	27%	\$28.85	0.82	0.76	COM_SEM-Water Heating-AEG-1
Grocery	Interior Lighting	Strategic Energy Management	sqft	New	0.31	3	\$0.17	4%	27%	\$28.85	4.40	4.22	COM_SEM-Lighting-AEG-1
Grocery	Exterior Lighting	Strategic Energy Management	sqft	New	0.10	3	\$0.17	4%	27%	\$28.85	1.38	1.33	COM_SEM-Lighting-AEG-1
Grocery	Refrigeration	Strategic Energy Management	sqft	New	0.94	3	\$0.17	4%	27%	\$28.85	13.99	13.10	COM_SEM-Refrigeration-AEG-1
Grocery	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.17	4%	27%	\$28.85	0.28	0.23	COM_SEM-Office Equipment-AEG-1
Grocery	Cooling	Commissioning	sqft	New	0.39	3	\$1.15	10%	61%	\$111.68	68.63	66.17	COM_CX-HVAC-AEG-1
Grocery	Heating	Commissioning	sqft	New	0.27	3	\$1.15	10%	61%	\$111.68	8.81	8.47	COM_CX-HVAC-AEG-1

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Grocery	Ventilation	Commissioning	sqft	New	0.18	3	\$1.15	10%	61%	\$111.68	38.55	37.07	COM_CX-HVAC-AEG-1
Grocery	Water Heating	Commissioning	sqft	New	0.04	3	\$1.15	10%	61%	\$111.68	5.32	5.11	COM_CX-Water Heating-AEG-1
Grocery	Interior Lighting	Commissioning	sqft	New	0.35	3	\$1.15	10%	61%	\$111.68	285.39	278.14	COM_CX-Lighting-AEG-1
Grocery	Exterior Lighting	Commissioning	sqft	New	0.11	3	\$1.15	10%	61%	\$111.68	66.96	65.39	COM_CX-Lighting-AEG-1
Grocery	Refrigeration	Commissioning	sqft	New	2.17	3	\$1.15	10%	61%	\$111.68	2,206.57	2,126.82	COM_CX-Refrigeration-AEG-1
Grocery	Cooling	Retrocommissioning	sqft	New	0.39	3	\$0.37	0%	0%	\$35.45	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Heating	Retrocommissioning	sqft	New	0.27	3	\$0.37	0%	0%	\$35.45	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Ventilation	Retrocommissioning	sqft	New	0.18	3	\$0.37	0%	0%	\$35.45	0.00	0.00	COM_RCX-HVAC-AEG-1
Grocery	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.37	0%	0%	\$35.45	0.00	0.00	COM_RCX-Water Heating-AEG-1
Grocery	Interior Lighting	Retrocommissioning	sqft	New	0.35	3	\$0.37	0%	0%	\$35.45	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Exterior Lighting	Retrocommissioning	sqft	New	0.11	3	\$0.37	0%	0%	\$35.45	0.00	0.00	COM_RCX-Lighting-AEG-1
Grocery	Refrigeration	Retrocommissioning	sqft	New	2.17	3	\$0.37	0%	0%	\$35.45	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Grocery	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.25	10	\$0.09	0%	0%	\$51.21	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	6.69	10	\$1.12	0%	0%	\$23.63	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.73	3	\$0.24	0%	0%	\$46.72	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Grocery	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	3.25	10	\$3.24	0%	0%	\$140.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.65	10	\$0.70	0%	0%	\$152.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Grocery	Miscellaneous	LED Signage	perBldg	New	204.10	16	\$75.53	20%	75%	\$40.64	1.15	1.08	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Grocery	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,252.58	25	\$3,434.77	0%	0%	\$148.57	0.00	0.00	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	Existing	0.41	45	\$0.84	15%	35%	\$73.73	96.26	96.63	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	Existing	0.62	45	\$0.84	15%	35%	\$73.73	7.35	7.11	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$73.73	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	Existing	1.06	20	\$0.86	15%	35%	\$86.30	252.23	253.22	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$86.30	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$86.30	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.94	20	\$0.81	45%	50%	\$123.80	55.79	56.01	Building Energy Simulation Tool
Health	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.81	45%	50%	\$123.80	-0.54	-0.52	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.06	20	\$0.81	45%	50%	\$123.80	-3.86	-3.77	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.09	45	\$1.70	15%	35%	\$66.64	-17.97	-18.04	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.76	45	\$1.70	15%	35%	\$66.64	18.32	17.72	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.58	45	\$1.70	15%	35%	\$66.64	131.37	128.43	Building Energy Simulation Tool

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Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	42.53	18	\$0.59	15%	50%	\$9,999.00	128.41	128.91	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-32.17	18	\$0.59	15%	50%	\$9,999.00	-4.88	-4.72	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-10.56	18	\$0.59	15%	50%	\$9,999.00	-35.01	-34.23	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	18.05	30	\$37.07	48%	48%	\$50.74	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	Existing	43.55	30	\$37.07	48%	48%	\$50.74	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	8.24	30	\$37.07	48%	48%	\$50.74	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	34,416.35	10	\$914.46	15%	75%	\$3.95	904.55	918.20	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	925.01	15	\$248.07	15%	75%	\$32.46	3,381.00	3,431.99	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,978.66	15	\$263.92	15%	75%	\$16.14	723.22	734.13	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	254.95	15	\$248.07	15%	75%	\$118.22	739.90	755.45	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	68,481.76	10	\$1,796.53	15%	75%	\$11.66	1,429.10	1,459.13	AEG-BEST
Health	Cooling	HVAC - Economizer	HP cool	Existing	257.62	5	\$267.96	18%	75%	\$246.56	1,020.51	1,030.36	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.91	15	\$0.05	5%	15%	\$6.70	236.71	239.13	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.20	14	\$5.25	3%	75%	\$195.56	75.30	71.88	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.69	18	\$0.26	15%	20%	\$39.83	90.26	88.25	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,630.18	15	\$189.00	13%	25%	\$13.57	111.37	108.13	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	587.44	15	\$1,273.23	13%	50%	\$253.65	126.14	122.48	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.43	15	\$0.06	13%	50%	\$15.32	443.30	430.41	FAN_VSD-Ventilation-MIDATL-v3.0-13
Health	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.04	15	\$0.23	10%	20%	\$653.51	11.10	10.78	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	2.35	15	\$0.76	3%	7%	\$24.18	9.69	9.25	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.29	15	\$0.76	3%	7%	\$24.18	116.04	112.66	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	10,011.16	15	\$7,501.21	15%	15%	\$27.06	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	22,342.49	15	\$7,501.21	15%	15%	\$27.06	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.35	3.05	2.94	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	Existing	354.15	15	\$410.87	15%	45%	\$134.81	112.23	109.19	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	Existing	336.65	15	\$698.92	15%	75%	\$241.25	205.47	200.76	RTU_PREC-Cooling-XCELCO-2017-18-1
Health	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	605.69	20	\$1,077.17	15%	25%	\$83.22	2.25	2.23	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	718.90	20	\$1,077.17	15%	25%	\$83.22	0.46	0.44	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.27	5	\$0.75	30%	40%	\$54.05	301.47	302.64	STAT_WIFI-AII-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.46	5	\$0.75	30%	40%	\$54.05	17.45	16.89	STAT_WIFI-AII-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.48	5	\$0.75	30%	40%	\$54.05	125.19	122.39	STAT_WIFI-AII-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	302.54	10	\$8.63	25%	65%	\$4.09	5.59	5.37	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	332.43	10	\$17.56	25%	65%	(\$48.20)	3.07	2.95	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	82.37	10	\$16.82	25%	65%	(\$65.39)	0.75	0.72	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	30%	\$8.17	10.07	9.77	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,164.17	15	\$15.38	16%	75%	\$1.54	13.06	12.55	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,239.94	4	\$75.87	25%	40%	(\$46.79)	8.46	8.13	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	7.10	6.82	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.13	20	\$258.33	1%	30%	\$2,019.68	22.61	21.72	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.96	15	\$0.36	3%	23%	\$44.99	683.69	680.31	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.34	15	\$0.60	3%	23%	\$53.02	957.17	952.43	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	323.71	15	\$56.14	1%	3%	\$21.27	18.55	18.91	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.32	15	\$65.99	1%	3%	\$151.81	0.61	0.62	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,647.66	11	\$26.48	15%	30%	\$0.56	273.12	271.87	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	680.71	16	\$1,864.95	5%	15%	\$318.01	186.45	185.60	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.76	9	\$0.65	15%	25%	\$58.13	93.55	93.34	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	121.85	8	\$56.85	15%	25%	\$79.81	49.72	49.61	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	152.36	7	\$3,486.31	15%	30%	\$4,296.08	93.26	93.05	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	21.34	12	\$50.74	4%	25%	\$317.03	7.72	7.45	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	7.11	4	\$24.51	4%	25%	\$1,141.45	1.67	1.95	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	32.99	15	\$347.21	0%	0%	\$1,294.97	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	28.25	2	\$10.74	4%	25%	\$281.62	2.63	4.15	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.78	15	\$508.61	2%	13%	\$9,999.00	39.26	39.27	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.66	15	\$5,552.98	2%	13%	\$9,999.00	57.43	57.44	RFG_HECOMP-Refrigeration-AEO15-4
Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	103.61	15	\$305.13	4%	25%	\$796.85	34.84	34.85	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	414.93	15	\$539.09	2%	13%	\$159.85	52.32	52.33	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	871.77	10	\$449.00	0%	0%	\$77.89	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	49.31	16	\$153.90	4%	25%	\$381.51	5.75	5.91	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	17.73	15	\$135.00	2%	13%	\$959.99	0.26	0.27	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	273.10	16	\$105.92	4%	25%	\$58.70	8.62	11.41	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	210.23	10	\$521.11	4%	25%	\$475.71	6.64	8.78	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	90.61	8	\$18,135.52	4%	25%	\$9,999.00	0.30	0.47	RFG_ADC-Refrigeration-PGE-R6-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	176.62	12	\$605.15	4%	25%	\$474.37	44.54	44.55	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	9.52	8	\$15.90	0%	0%	\$281.68	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.98	8	\$3.87	0%	0%	\$665.13	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	3.45	5	\$49.37	0%	0%	\$3,341.97	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	906.36	5	\$288.64	25%	75%	\$74.61	31.84	30.88	VEND_CTRL-Miscellaneous-SCE-17R0-34
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	8,182.88	18	\$8,815.42	25%	50%	\$115.89	214.48	209.70	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	534.48	15	\$335.00	0%	0%	\$33.82	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	617.62	15	\$335.00	0%	0%	\$33.82	0.00	0.00	AEG - BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	28.62	4	\$37.32	10%	50%	\$327.57	77.00	65.68	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.02	8	\$0.00	0%	0%	\$4.52	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$4.52	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$4.52	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$160.68	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	5,959.46	18	\$4,231.40	0%	5%	\$76.38	25.87	25.29	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	520.63	12	\$2,098.57	5%	7%	\$537.40	0.49	0.47	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Health	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.02	10	\$0.70	0%	5%	\$6,212.06	0.10	0.09	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	309.78	7	\$423.28	0%	5%	(\$249.07)	0.06	0.06	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	27.13	7	\$423.28	0%	5%	(\$249.07)	0.08	0.08	CW-Miscellaneous-RTF-v5.1-21

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Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	27.13	7	\$423.28	0%	5%	(\$249.07)	0.08	0.08	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	48,672.74	15	\$1,114.41	0%	5%	\$22.76	9.22	8.86	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,424.65	15	\$1,114.41	0%	5%	\$22.76	3.84	3.76	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	16,256.40	6	\$37.07	1%	3%	\$0.45	66.59	63.76	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.08	20	\$0.79	0%	5%	\$981.45	8.87	8.41	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	Existing	1.56	25	\$4.24	0%	0%	\$58.58	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	Existing	2.13	25	\$4.24	0%	0%	\$58.58	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	Existing	0.70	25	\$4.24	0%	0%	\$58.58	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	Existing	0.91	25	\$4.24	0%	0%	\$58.58	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.88	25	\$4.24	0%	0%	\$58.58	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$58.58	0.00	0.00	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	Existing	0.40	3	\$0.10	4%	28%	\$22.89	246.18	248.70	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	Existing	0.46	3	\$0.10	4%	28%	\$22.89	14.25	13.61	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	Existing	0.15	3	\$0.10	4%	28%	\$22.89	102.23	99.26	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	Existing	0.15	3	\$0.10	4%	28%	\$22.89	4.05	3.89	COM_SEM-Water Heating-AEG-1

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Health	Interior Lighting	Strategic Energy Management	sqft	Existing	0.32	3	\$0.10	4%	28%	\$22.89	201.68	204.43	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.10	4%	28%	\$22.89	22.15	22.10	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	Existing	0.03	3	\$0.10	4%	28%	\$22.89	18.16	18.16	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	Existing	0.04	3	\$0.10	4%	28%	\$22.89	30.25	25.81	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	Existing	0.55	3	\$2.18	0%	0%	\$399.89	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	Existing	0.63	3	\$2.18	0%	0%	\$399.89	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	Existing	0.21	3	\$2.18	0%	0%	\$399.89	0.00	0.00	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	Existing	0.07	3	\$2.18	0%	0%	\$399.89	0.00	0.00	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	Existing	0.37	3	\$2.18	0%	0%	\$399.89	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$2.18	0%	0%	\$399.89	0.00	0.00	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	Existing	0.07	3	\$2.18	0%	0%	\$399.89	0.00	0.00	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	Existing	0.55	3	\$0.69	12%	52%	\$126.93	568.11	573.92	COM_RCX-HVAC-AEG-1
Health	Heating	Retrocommissioning	sqft	Existing	0.63	3	\$0.69	12%	52%	\$126.93	32.89	31.40	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	Existing	0.21	3	\$0.69	12%	52%	\$126.93	235.92	229.06	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	Existing	0.07	3	\$0.69	12%	52%	\$126.93	3.12	3.00	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	Existing	0.37	3	\$0.69	12%	52%	\$126.93	387.84	393.14	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.69	12%	52%	\$126.93	42.59	42.50	COM_RCX-Lighting-AEG-1

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Health	Refrigeration	Retrocommissioning	sqft	Existing	0.07	3	\$0.69	12%	52%	\$126.93	69.83	69.84	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.26	10	\$0.09	0%	0%	\$51.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.20	10	\$1.12	0%	0%	\$841.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.05	3	\$0.24	0%	0%	\$1,663.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.10	10	\$3.24	0%	0%	\$4,989.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$5,414.20	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	Existing	219.63	16	\$75.53	20%	75%	\$37.76	13.07	12.21	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	12,593.95	25	\$20,545.49	0%	75%	\$163.54	437.46	420.66	WHP Analysis
Health	Cooling	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$236.35	4.85	4.70	Building Energy Simulation Tool
Health	Heating	Insulation - Ceiling	sqft roof	New	0.25	45	\$0.84	15%	50%	\$236.35	1.80	1.75	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$236.35	4.26	4.14	Building Energy Simulation Tool
Health	Cooling	Insulation - Ducting	sqft duct	New	0.50	20	\$0.86	15%	50%	\$172.71	77.46	75.16	Building Energy Simulation Tool
Health	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$172.71	0.00	0.00	Building Energy Simulation Tool
Health	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$172.71	0.00	0.00	Building Energy Simulation Tool
Health	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.18	20	\$0.81	45%	50%	\$5,571.58	4.04	3.92	Building Energy Simulation Tool

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Health	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.13	20	\$0.81	45%	50%	\$5,571.58	-0.13	-0.12	Building Energy Simulation Tool
Health	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$5,571.58	-0.98	-0.95	Building Energy Simulation Tool
Health	Cooling	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$355.85	1.02	0.99	Building Energy Simulation Tool
Health	Heating	Insulation - Wall Cavity	sqft wall	New	0.30	45	\$1.70	15%	50%	\$355.85	1.90	1.85	Building Energy Simulation Tool
Health	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.10	45	\$1.70	15%	50%	\$355.85	14.50	14.06	Building Energy Simulation Tool
Health	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	23.43	18	\$0.59	15%	35%	\$0.36	14.68	14.24	Building Energy Simulation Tool
Health	Heating	HVAC - Duct Repair and Sealing	tonCool	New	109.50	18	\$0.59	15%	35%	\$0.36	3.17	3.07	Building Energy Simulation Tool
Health	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	36.91	18	\$0.59	15%	35%	\$0.36	24.12	23.38	Building Energy Simulation Tool
Health	Cooling	Windows - High Efficiency Glazing	sqft window	New	11.20	30	\$37.07	66%	66%	\$71.27	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Health	Heating	Windows - High Efficiency Glazing	sqft window	New	31.17	30	\$37.07	66%	66%	\$71.27	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Health	Ventilation	Windows - High Efficiency Glazing	sqft window	New	6.05	30	\$37.07	66%	66%	\$71.27	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Health	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	20,870.28	10	\$914.46	15%	75%	\$6.10	91.86	86.28	AEG-BEST
Health	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	560.93	15	\$248.07	15%	75%	\$50.10	427.25	403.73	AEG-BEST
Health	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,199.87	15	\$263.92	15%	75%	\$24.92	91.39	86.36	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Health	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	158.13	15	\$248.07	15%	75%	\$177.73	96.35	91.05	CHLR_VSPMP-Cooling-SCE-17_R0-86
Health	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	40,385.15	10	\$1,796.53	15%	75%	\$18.43	142.20	133.56	AEG-BEST

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Health	Cooling	HVAC - Economizer	HP cool	New	159.24	5	\$267.96	18%	75%	\$375.45	61.96	57.81	AEG-BEST
Health	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.57	15	\$0.05	10%	15%	\$10.16	15.17	14.34	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Health	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.29	14	\$5.25	6%	75%	\$270.17	9.53	9.01	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.50	18	\$0.26	15%	20%	\$53.06	22.61	21.91	RES_HRV-Cooling-7PLN-v1-2
Health	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	1,119.85	15	\$189.00	19%	25%	\$19.10	7.54	7.12	VENT_PMSM-Ventilation-AEG-2016-2
Health	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	403.54	15	\$1,273.23	19%	50%	\$357.09	14.97	14.14	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Health	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.31	15	\$0.06	19%	50%	\$21.57	52.61	49.69	AEG-BEST
Health	Ventilation	Ventilation - Demand Controlled	sqft	New	0.03	15	\$0.23	10%	20%	\$870.62	1.58	1.49	VENT_DCV-Ventilation-7PLN-v5-5
Health	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.86	15	\$0.76	3%	7%	\$35.70	1.46	1.38	HVAC_DOAS-Heating-7PLN-v5-25
Health	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	3%	7%	\$35.70	9.85	9.31	HVAC_DOAS-Heating-7PLN-v5-1
Health	Cooling	Destratification Fans (HVLS)	Strat Fan	New	6,210.51	15	\$7,501.21	15%	15%	\$38.40	0.00	0.00	HVLS-Cooling-AEG-1
Health	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,992.61	15	\$7,501.21	15%	15%	\$38.40	0.00	0.00	HVLS-Heating-AEG-1
Health	Cooling	RTU - Maintenance	tonCool	New	6.24	3	\$33.20	15%	45%	\$1,812.24	0.10	0.09	RTU_MNT-Cooling-PGE-R2-1
Health	Cooling	RTU - Advanced Controls	tonCool	New	252.67	15	\$410.87	15%	45%	\$186.31	25.72	24.75	RTU_CTRL-Cooling-RTF-1.1-1
Health	Cooling	RTU - Evaporative Precooler	tonCool	New	240.18	15	\$698.92	15%	75%	\$333.40	57.27	55.56	RTU_PREC-Cooling-XCELCO-2017-18-1

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Health	Cooling	Ductless Mini Split Heat Pump	tonCool	New	481.52	20	\$1,077.17	15%	25%	\$106.83	0.46	0.44	DHP-Cooling/Heating-7PLN-v2-1
Health	Heating	Ductless Mini Split Heat Pump	tonCool	New	523.64	20	\$1,077.17	15%	25%	\$106.83	0.08	0.08	DHP-Cooling/Heating-7PLN-v2-1
Health	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.79	5	\$0.75	30%	40%	\$76.74	21.89	20.80	STAT_WIFI-All-7PLN-v2-1
Health	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.05	5	\$0.75	30%	40%	\$76.74	1.34	1.28	STAT_WIFI-All-7PLN-v2-1
Health	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$76.74	10.23	9.71	STAT_WIFI-All-7PLN-v2-1
Health	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	143.94	10	\$8.63	25%	65%	\$8.35	0.69	0.65	DHW_AER-Water Heating-ILTRM-v4.0-1
Health	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	158.17	10	\$17.56	25%	65%	(\$98.42)	0.38	0.36	DHW_SHW-Water Heating-RTF-v3.1-4
Health	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	39.19	10	\$16.82	25%	65%	(\$133.52)	0.11	0.10	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Health	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	15%	30%	\$8.34	2.50	2.41	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Health	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,107.78	15	\$15.38	1%	75%	\$1.57	3.01	2.84	AEG-BEST
Health	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	589.94	4	\$75.87	25%	40%	(\$95.54)	0.61	0.57	DHW_SPR-Water Heating-RTF-v2.4-1
Health	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	0.27	0.25	DHW_STBK-Water Heating-ILTRM-v4.0-4
Health	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,061.85	4.28	4.05	AEG-BEST
Health	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.89	15	\$0.36	11%	23%	\$46.47	260.89	254.79	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Health	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.24	15	\$0.60	11%	23%	\$54.77	365.25	356.70	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Health	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	299.20	15	\$56.14	1%	3%	\$21.95	2.89	2.80	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.83	15	\$65.99	1%	3%	\$143.40	0.10	0.09	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Health	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Health	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	6,127.31	11	\$26.48	15%	30%	\$0.58	42.91	40.99	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Health	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	627.43	16	\$1,864.95	5%	15%	\$328.54	35.23	33.81	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Health	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.62	9	\$0.65	15%	25%	\$60.38	12.84	12.24	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Health	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	112.26	8	\$56.85	15%	25%	\$82.90	6.31	6.01	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Health	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	140.37	7	\$3,486.31	15%	30%	\$4,462.82	10.71	10.19	CLTG_EXT_PV-Exterior Lighting-AEG-2
Health	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	20.00	12	\$50.74	4%	25%	\$323.37	1.28	1.20	RFG_ASH-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	6.36	4	\$24.51	4%	25%	\$1,220.97	0.12	0.13	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Health	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	30.77	15	\$347.21	0%	0%	\$1,324.28	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	23.73	2	\$10.74	4%	25%	\$331.28	0.10	0.14	RFG_STR-Refrigeration-7PLN-v6-1
Health	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.73	15	\$508.61	2%	13%	\$9,999.00	7.30	7.01	RFG_HECOMP-Refrigeration-AEO17-3
Health	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.74	15	\$5,552.98	2%	13%	\$9,999.00	10.68	10.25	RFG_HECOMP-Refrigeration-AEO17-5

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Health	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	96.64	15	\$305.13	4%	25%	\$814.88	6.48	6.22	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Health	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	387.03	15	\$539.09	2%	13%	\$163.47	9.73	9.34	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	813.15	10	\$449.00	0%	0%	\$79.66	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Health	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	45.55	16	\$153.90	4%	25%	\$393.52	1.10	1.06	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Health	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	16.38	15	\$135.00	2%	13%	\$990.21	0.05	0.05	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Health	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	237.98	16	\$105.92	4%	25%	\$65.13	1.63	1.77	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Health	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	183.20	10	\$521.11	4%	25%	\$527.78	0.98	1.09	RFG_DDEF-Refrigeration-VTTRM-1
Health	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	2.72	8	\$647.70	4%	25%	\$9,999.00	0.04	0.05	RFG_ASH-Refrigeration-NMTRM-2016-1
Health	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	164.74	12	\$5,648.09	4%	25%	\$4,527.64	7.41	7.09	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Health	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	8.96	8	\$15.90	0%	0%	\$285.61	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Health	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.92	8	\$3.87	0%	0%	\$674.40	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Health	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.22	5	\$49.37	0%	0%	\$3,413.32	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Health	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	842.47	5	\$288.64	25%	75%	\$76.33	2.82	2.62	VEND_CTRL-Miscellaneous-SCE-17R0-41
Health	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	5,940.08	18	\$8,815.42	25%	50%	\$154.39	53.73	52.07	COOK_EXHD-Food Preparation-7PLN-v3-10
Health	Cooling	Lodging - Guest Room Controls	LodgUnit	New	427.94	15	\$335.00	0%	0%	\$43.07	0.00	0.00	AEG - BEST
Health	Heating	Lodging - Guest Room Controls	LodgUnit	New	453.07	15	\$335.00	0%	0%	\$43.07	0.00	0.00	AEG - BEST
Health	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	28.00	4	\$37.32	10%	50%	\$333.53	5.48	4.64	SMARTSTRIP-Electronics-RTF-v3.2-1
Health	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Health	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Cooling	Data Center - Commercially Available Measures	sqft	New	0.02	8	\$0.00	0%	0%	\$4.42	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$4.42	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$4.42	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$60.89	0.00	0.00	com-datacenters-7p_v5p.xlsx
Health	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	4,326.06	18	\$4,231.40	0%	5%	\$101.75	6.48	6.28	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Health	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	487.99	12	\$2,098.57	5%	7%	\$548.16	0.08	0.08	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Health	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Health	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$37,813.23	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Health	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.02	10	\$0.65	0%	5%	\$5,882.44	0.01	0.01	CW_OZON-Water Heating-ILTRM-v4.0-2
Health	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	294.78	7	\$423.28	0%	5%	(\$253.96)	0.01	0.01	CW-Water Heating-RTF-v5.1-12
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	25.83	7	\$423.28	0%	5%	(\$253.96)	0.01	0.01	CW-Miscellaneous-RTF-v5.1-21
Health	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	25.83	7	\$423.28	0%	5%	(\$253.96)	0.01	0.01	CW-Miscellaneous-RTF-v5.1-21
Health	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	46,315.35	15	\$1,114.41	0%	5%	\$23.24	1.70	1.61	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,312.53	15	\$1,114.41	0%	5%	\$23.24	0.71	0.67	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Health	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	8,092.08	6	\$37.07	1%	3%	\$0.89	10.45	10.03	ESTAR_WC-Miscellaneous-7PLN-v6-1
Health	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.08	20	\$0.71	0%	5%	\$891.61	1.68	1.59	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Health	Cooling	Advanced New Construction Designs	sqft	New	1.59	25	\$4.24	10%	25%	\$56.15	162.59	158.10	ADVNC-AII-RSRCH-1
Health	Heating	Advanced New Construction Designs	sqft	New	2.11	25	\$4.24	10%	25%	\$56.15	9.98	9.71	ADVNC-AII-RSRCH-1
Health	Ventilation	Advanced New Construction Designs	sqft	New	0.71	25	\$4.24	10%	25%	\$56.15	75.97	73.85	ADVNC-AII-RSRCH-1
Health	Water Heating	Advanced New Construction Designs	sqft	New	0.92	25	\$4.24	10%	25%	\$56.15	3.88	3.77	ADVNC-AII-RSRCH-1
Health	Interior Lighting	Advanced New Construction Designs	sqft	New	1.90	25	\$4.24	10%	25%	\$56.15	768.56	756.06	ADVNC-AII-RSRCH-1

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Health	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$56.15	62.89	61.54	ADVNC-AII-RSRCH-1
Health	Cooling	Strategic Energy Management	sqft	New	0.25	3	\$0.06	4%	28%	\$16.86	9.64	8.96	COM_SEM-HVAC-AEG-1
Health	Heating	Strategic Energy Management	sqft	New	0.33	3	\$0.06	4%	28%	\$16.86	0.59	0.55	COM_SEM-HVAC-AEG-1
Health	Ventilation	Strategic Energy Management	sqft	New	0.11	3	\$0.06	4%	28%	\$16.86	4.50	4.18	COM_SEM-HVAC-AEG-1
Health	Water Heating	Strategic Energy Management	sqft	New	0.14	3	\$0.06	4%	28%	\$16.86	0.23	0.21	COM_SEM-Water Heating-AEG-1
Health	Interior Lighting	Strategic Energy Management	sqft	New	0.29	3	\$0.06	4%	28%	\$16.86	11.39	10.97	COM_SEM-Lighting-AEG-1
Health	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.06	4%	28%	\$16.86	1.24	1.18	COM_SEM-Lighting-AEG-1
Health	Refrigeration	Strategic Energy Management	sqft	New	0.03	3	\$0.06	4%	28%	\$16.86	1.03	0.98	COM_SEM-Refrigeration-AEG-1
Health	Office Equipment	Strategic Energy Management	sqft	New	0.04	3	\$0.06	4%	28%	\$16.86	1.67	1.41	COM_SEM-Office Equipment-AEG-1
Health	Cooling	Commissioning	sqft	New	0.34	3	\$1.20	12%	52%	\$281.61	139.76	134.43	COM_CX-HVAC-AEG-1
Health	Heating	Commissioning	sqft	New	0.45	3	\$1.20	12%	52%	\$281.61	8.58	8.26	COM_CX-HVAC-AEG-1
Health	Ventilation	Commissioning	sqft	New	0.15	3	\$1.20	12%	52%	\$281.61	65.31	62.78	COM_CX-HVAC-AEG-1
Health	Water Heating	Commissioning	sqft	New	0.07	3	\$1.20	12%	52%	\$281.61	1.11	1.07	COM_CX-Water Heating-AEG-1
Health	Interior Lighting	Commissioning	sqft	New	0.34	3	\$1.20	12%	52%	\$281.61	550.56	538.61	COM_CX-Lighting-AEG-1
Health	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$1.20	12%	52%	\$281.61	45.05	43.73	COM_CX-Lighting-AEG-1
Health	Refrigeration	Commissioning	sqft	New	0.06	3	\$1.20	12%	52%	\$281.61	110.88	107.50	COM_CX-Refrigeration-AEG-1
Health	Cooling	Retrocommissioning	sqft	New	0.34	3	\$0.38	0%	0%	\$89.39	0.00	0.00	COM_RCX-HVAC-AEG-1

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Health	Heating	Retrocommissioning	sqft	New	0.45	3	\$0.38	0%	0%	\$89.39	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Ventilation	Retrocommissioning	sqft	New	0.15	3	\$0.38	0%	0%	\$89.39	0.00	0.00	COM_RCX-HVAC-AEG-1
Health	Water Heating	Retrocommissioning	sqft	New	0.07	3	\$0.38	0%	0%	\$89.39	0.00	0.00	COM_RCX-Water Heating-AEG-1
Health	Interior Lighting	Retrocommissioning	sqft	New	0.34	3	\$0.38	0%	0%	\$89.39	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.38	0%	0%	\$89.39	0.00	0.00	COM_RCX-Lighting-AEG-1
Health	Refrigeration	Retrocommissioning	sqft	New	0.06	3	\$0.38	0%	0%	\$89.39	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Health	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.24	10	\$0.09	0%	0%	\$53.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.19	10	\$1.12	0%	0%	\$860.50	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.05	3	\$0.24	0%	0%	\$1,701.37	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.09	10	\$3.24	0%	0%	\$5,102.46	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.02	10	\$0.70	0%	0%	\$5,536.76	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Health	Miscellaneous	LED Signage	perBldg	New	218.65	16	\$75.53	20%	75%	\$37.93	2.13	2.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Health	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	13,506.45	25	\$20,594.91	0%	75%	\$148.57	162.92	158.04	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$126.31	32.03	31.50	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	Existing	0.56	45	\$0.84	15%	35%	\$126.31	187.97	183.18	Building Energy Simulation Tool

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College	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$126.31	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	Existing	0.69	20	\$0.86	15%	35%	\$130.31	326.26	320.87	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$130.31	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$130.31	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.51	20	\$0.81	45%	50%	\$326.10	120.74	118.74	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.21	20	\$0.81	45%	50%	\$326.10	-17.66	-17.21	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$326.10	-10.73	-10.40	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.47	45	\$1.70	15%	35%	\$394.67	-138.79	-136.50	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.71	45	\$1.70	15%	35%	\$394.67	74.52	72.62	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.13	45	\$1.70	15%	35%	\$394.67	45.27	43.87	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	31.29	18	\$0.59	15%	50%	\$3.62	207.76	204.33	Building Energy Simulation Tool
College	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-11.38	18	\$0.59	15%	50%	\$3.62	-26.80	-26.12	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.14	18	\$0.59	15%	50%	\$3.62	-16.29	-15.78	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	12.26	30	\$37.07	48%	48%	\$62.85	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	Existing	39.76	30	\$37.07	48%	48%	\$62.85	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	4.31	30	\$37.07	48%	48%	\$62.85	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	21,838.14	10	\$914.46	15%	75%	\$6.03	450.87	438.26	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	627.53	15	\$248.07	15%	75%	\$46.31	1,801.77	1,751.40	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	1,446.17	15	\$263.92	15%	75%	\$21.38	415.22	403.62	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	Existing	137.98	5	\$267.96	18%	75%	\$445.75	1,000.14	969.23	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.51	15	\$0.05	5%	15%	\$11.75	265.00	259.59	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	1.09	14	\$5.25	3%	75%	\$580.54	800.02	772.36	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.30	18	\$0.26	15%	20%	\$91.69	80.82	78.31	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	508.17	15	\$189.00	13%	25%	\$42.97	100.22	95.95	VENT_PMSM-Ventilation-AEG-2016-2
College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	183.12	15	\$1,273.23	13%	50%	\$803.32	113.52	108.68	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.18	15	\$0.08	13%	50%	\$48.53	398.95	381.93	FAN_VSD-Ventilation-MIDATL-v3.0-13
College	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.02	15	\$0.23	10%	25%	\$1,504.46	15.15	14.51	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.76	15	\$0.76	3%	8%	\$36.66	156.22	150.82	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.65	15	\$0.76	3%	8%	\$36.66	185.41	177.50	HVAC_DOAS-Heating-7PLN-v5-1

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College	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	5,577.59	15	\$7,501.21	15%	25%	\$39.22	250.28	245.17	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	16,732.75	15	\$7,501.21	15%	25%	\$39.22	266.35	257.14	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	28.21	27.21	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	Existing	163.39	15	\$410.87	15%	45%	\$292.20	475.96	463.13	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	Existing	155.32	15	\$698.92	15%	75%	\$522.90	869.39	849.57	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	279.37	20	\$979.24	15%	25%	\$123.23	17.69	17.57	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	528.58	20	\$979.24	15%	25%	\$123.23	204.40	192.90	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.71	5	\$0.75	30%	40%	\$85.89	335.78	330.23	STAT_WIFI-AII-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.10	5	\$0.75	30%	40%	\$85.89	184.49	179.79	STAT_WIFI-AII-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.21	5	\$0.75	30%	40%	\$85.89	112.09	108.61	STAT_WIFI-AII-7PLN-v2-1
College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	176.38	10	\$8.63	25%	65%	\$7.01	108.89	104.63	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	193.81	10	\$17.56	25%	65%	(\$82.68)	59.82	57.48	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	48.02	10	\$16.82	25%	65%	(\$112.17)	14.59	14.02	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	20%	\$8.17	65.02	63.09	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	678.56	15	\$15.38	16%	75%	\$2.64	254.33	244.40	AEG-BEST

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College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	722.91	4	\$75.87	25%	40%	(\$80.26)	164.76	158.33	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	138.26	132.87	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.12	20	\$258.33	1%	30%	\$2,020.39	440.15	422.96	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.52	15	\$0.36	3%	23%	\$82.44	767.39	758.29	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.73	15	\$0.60	3%	23%	\$97.16	1,074.35	1,061.60	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	327.40	15	\$56.14	1%	3%	\$20.63	19.92	19.85	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.33	15	\$65.99	1%	3%	\$148.87	0.88	0.88	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	3,601.66	11	\$26.48	15%	30%	\$1.04	306.45	302.84	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	368.80	16	\$1,864.95	5%	15%	\$585.45	209.20	206.73	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.53	9	\$0.65	15%	25%	\$191.60	258.75	256.30	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	48.75	8	\$56.85	15%	25%	\$198.82	137.53	136.23	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	60.95	7	\$3,486.31	15%	30%	\$9,999.00	257.95	255.51	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	14.50	12	\$50.74	4%	25%	\$466.42	3.17	3.06	RFG_ASH-Refrigeration-7PLN-v6-1

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College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.38	4	\$24.51	4%	25%	\$1,441.04	0.77	0.85	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	23.22	15	\$347.21	0%	0%	\$1,825.03	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	19.20	2	\$10.74	4%	25%	\$414.33	0.86	1.35	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.55	15	\$508.61	2%	13%	\$9,999.00	16.48	16.35	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	9.62	15	\$5,552.98	2%	13%	\$9,999.00	24.11	23.92	RFG_HECOMP-Refrigeration-AEO15-4
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	72.93	15	\$305.13	4%	25%	\$1,123.01	14.63	14.51	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	292.07	15	\$539.09	2%	13%	\$225.28	21.97	21.79	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	613.64	10	\$449.00	0%	0%	\$109.78	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	33.33	16	\$153.90	4%	25%	\$558.24	2.31	2.35	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	11.99	15	\$135.00	2%	13%	\$1,404.68	0.10	0.11	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	228.22	16	\$105.92	4%	25%	\$65.02	4.30	5.16	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	175.69	10	\$521.11	4%	25%	\$526.96	3.31	3.97	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	61.59	8	\$18,135.52	4%	25%	\$9,999.00	0.10	0.15	RFG_ADC-Refrigeration-PGE-R6-1

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College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	124.32	12	\$605.15	4%	25%	\$668.53	18.70	18.55	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.47	8	\$15.90	0%	0%	\$414.42	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.67	8	\$3.87	0%	0%	\$978.56	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.35	5	\$49.37	0%	0%	\$4,916.83	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,669.86	5	\$288.64	25%	75%	\$40.50	24.11	23.38	VEND_CTRL-Miscellaneous-SCE-17R0-31
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	3,509.17	18	\$8,815.42	25%	50%	\$266.78	192.04	186.07	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	271.18	15	\$335.00	0%	0%	\$51.41	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	482.21	15	\$335.00	0%	0%	\$51.41	0.00	0.00	AEG - BEST
College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	23.99	4	\$37.32	10%	50%	\$389.51	133.47	113.28	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.16	0.00	0.00	com-datacenters-7p_v5p.xlsx

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College	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$58.14	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,555.67	18	\$4,231.40	0%	5%	\$175.83	23.16	22.44	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	707.74	12	\$2,098.57	5%	7%	\$395.32	0.37	0.35	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-1
College	Miscellaneous	Pool Pump - Timer	perBldg	Existing	141.67	10	\$19.59	15%	75%	\$19.89	13.83	13.31	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	64.03	5	\$37,813.23	15%	75%	\$9,999.00	2.82	2.65	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.30	0%	5%	\$4,650.37	1.90	1.82	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	180.61	7	\$423.28	0%	5%	(\$484.79)	1.14	1.10	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.13	7	\$423.28	0%	5%	(\$484.79)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.13	7	\$423.28	0%	5%	(\$484.79)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	28,377.09	15	\$1,114.41	0%	5%	\$39.93	179.66	172.65	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	164.42	15	\$1,114.41	0%	5%	\$39.93	0.17	0.17	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,326.67	6	\$37.07	1%	3%	\$5.46	11.11	10.63	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.11	0%	5%	\$981.45	3.15	2.99	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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College	Cooling	Advanced New Construction Designs	sqft	Existing	0.95	25	\$4.24	0%	0%	\$82.63	0.00	0.00	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	Existing	2.07	25	\$4.24	0%	0%	\$82.63	0.00	0.00	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	Existing	0.41	25	\$4.24	0%	0%	\$82.63	0.00	0.00	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$82.63	0.00	0.00	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.95	25	\$4.24	0%	0%	\$82.63	0.00	0.00	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.24	0%	0%	\$82.63	0.00	0.00	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	Existing	0.22	3	\$0.04	3%	29%	\$13.76	298.57	292.47	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	Existing	0.34	3	\$0.04	3%	29%	\$13.76	164.05	158.37	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	Existing	0.06	3	\$0.04	3%	29%	\$13.76	99.67	95.42	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	Existing	0.09	3	\$0.04	3%	29%	\$13.76	85.52	82.18	COM_SEM-Water Heating-AEG-1
College	Interior Lighting	Strategic Energy Management	sqft	Existing	0.16	3	\$0.04	3%	29%	\$13.76	234.34	232.74	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.05	3	\$0.04	3%	29%	\$13.76	66.36	65.74	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.04	3%	29%	\$13.76	8.26	8.19	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	Existing	0.03	3	\$0.04	3%	29%	\$13.76	56.81	48.22	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	Existing	0.31	3	\$0.82	0%	0%	\$248.29	0.00	0.00	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	Existing	0.47	3	\$0.82	0%	0%	\$248.29	0.00	0.00	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	Existing	0.09	3	\$0.82	0%	0%	\$248.29	0.00	0.00	COM_CX-HVAC-AEG-1

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College	Water Heating	Commissioning	sqft	Existing	0.04	3	\$0.82	0%	0%	\$248.29	0.00	0.00	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	Existing	0.19	3	\$0.82	0%	0%	\$248.29	0.00	0.00	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	Existing	0.05	3	\$0.82	0%	0%	\$248.29	0.00	0.00	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.82	0%	0%	\$248.29	0.00	0.00	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	Existing	0.31	3	\$0.26	10%	46%	\$78.81	572.41	560.72	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	Existing	0.47	3	\$0.26	10%	46%	\$78.81	314.50	303.63	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	Existing	0.09	3	\$0.26	10%	46%	\$78.81	191.08	182.93	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	Existing	0.04	3	\$0.26	10%	46%	\$78.81	54.65	52.52	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	Existing	0.19	3	\$0.26	10%	46%	\$78.81	374.38	371.83	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	Existing	0.05	3	\$0.26	10%	46%	\$78.81	106.03	105.02	COM_RCX-Lighting-AEG-1
College	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.26	10%	46%	\$78.81	26.38	26.18	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$100.29	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.04	10	\$1.12	0%	0%	\$4,136.74	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$8,179.09	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	Existing	98.12	16	\$75.53	20%	75%	\$84.52	12.00	11.22	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,000.21	25	\$1,631.72	0%	75%	\$163.54	85.15	81.87	WHP Analysis
College	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$684.90	0.00	0.00	Building Energy Simulation Tool
College	Heating	Insulation - Ceiling	sqft roof	New	0.11	45	\$0.84	15%	50%	\$684.90	23.15	22.47	Building Energy Simulation Tool
College	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$684.90	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Insulation - Ducting	sqft duct	New	0.43	20	\$0.86	15%	50%	\$199.64	135.26	131.34	Building Energy Simulation Tool
College	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$199.64	0.00	0.00	Building Energy Simulation Tool
College	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$199.64	0.00	0.00	Building Energy Simulation Tool
College	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.14	20	\$0.81	45%	50%	\$925.66	12.66	12.29	Building Energy Simulation Tool
College	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.05	20	\$0.81	45%	50%	\$925.66	-1.42	-1.37	Building Energy Simulation Tool
College	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$925.66	-0.91	-0.88	Building Energy Simulation Tool
College	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.03	45	\$1.70	15%	50%	\$3,182.79	-6.03	-5.85	Building Energy Simulation Tool
College	Heating	Insulation - Wall Cavity	sqft wall	New	0.06	45	\$1.70	15%	50%	\$3,182.79	4.35	4.22	Building Energy Simulation Tool
College	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$3,182.79	2.79	2.71	Building Energy Simulation Tool
College	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	20.10	18	\$0.59	15%	35%	\$11.83	27.83	27.01	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
College	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-12.38	18	\$0.59	15%	35%	\$11.83	-5.97	-5.79	Building Energy Simulation Tool
College	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-2.47	18	\$0.59	15%	35%	\$11.83	-3.83	-3.71	Building Energy Simulation Tool
College	Cooling	Windows - High Efficiency Glazing	sqft window	New	8.18	30	\$37.07	66%	66%	\$69.60	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
College	Heating	Windows - High Efficiency Glazing	sqft window	New	37.18	30	\$37.07	66%	66%	\$69.60	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
College	Ventilation	Windows - High Efficiency Glazing	sqft window	New	4.28	30	\$37.07	66%	66%	\$69.60	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
College	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	13,398.19	10	\$914.46	15%	75%	\$9.50	46.04	43.24	AEG-BEST
College	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	385.01	15	\$248.07	15%	75%	\$72.99	228.83	216.21	AEG-BEST
College	Cooling	Chiller - Variable Speed Fans	HP fan	New	887.26	15	\$263.92	15%	75%	\$33.69	52.73	49.83	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
College	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
College	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
College	Cooling	HVAC - Economizer	HP cool	New	89.65	5	\$267.96	18%	75%	\$669.72	63.21	59.13	AEG-BEST
College	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.34	15	\$0.05	10%	15%	\$17.04	18.33	17.36	CVENT_NIGHTPURGE-Cooling-E3T-102-1
College	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	1.02	14	\$5.25	6%	75%	\$607.37	141.83	134.07	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.29	18	\$0.26	15%	20%	\$90.82	28.47	27.59	RES_HRV-Cooling-7PLN-v1-2
College	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	503.01	15	\$189.00	19%	25%	\$42.55	9.53	9.01	VENT_PMSM-Ventilation-AEG-2016-2

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College	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	181.26	15	\$1,273.23	19%	50%	\$795.39	18.94	17.89	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
College	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.18	15	\$0.08	19%	50%	\$48.05	66.55	62.88	AEG-BEST
College	Ventilation	Ventilation - Demand Controlled	sqft	New	0.02	15	\$0.23	10%	25%	\$1,490.26	3.04	2.87	VENT_DCV-Ventilation-7PLN-v5-5
College	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.82	15	\$0.76	3%	8%	\$35.08	32.93	31.16	HVAC_DOAS-Heating-7PLN-v5-25
College	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.64	15	\$0.76	3%	8%	\$35.08	37.13	35.08	HVAC_DOAS-Heating-7PLN-v5-1
College	Cooling	Destratification Fans (HVLS)	Strat Fan	New	3,718.94	15	\$7,501.21	15%	25%	\$44.07	34.62	32.80	HVLS-Cooling-AEG-1
College	Heating	Destratification Fans (HVLS)	Strat Fan	New	15,648.23	15	\$7,501.21	15%	25%	\$44.07	50.71	47.99	HVLS-Heating-AEG-1
College	Cooling	RTU - Maintenance	tonCool	New	5.99	3	\$33.20	15%	45%	\$1,887.49	0.91	0.85	RTU_MNT-Cooling-PGE-R2-1
College	Cooling	RTU - Advanced Controls	tonCool	New	111.89	15	\$410.87	15%	45%	\$420.69	110.54	106.36	RTU_CTRL-Cooling-RTF-1.1-1
College	Cooling	RTU - Evaporative Precooler	tonCool	New	106.36	15	\$698.92	15%	75%	\$752.84	245.78	238.43	RTU_PREC-Cooling-XCELCO-2017-18-1
College	Cooling	Ductless Mini Split Heat Pump	tonCool	New	222.10	20	\$979.24	15%	25%	\$132.33	3.85	3.65	DHP-Cooling/Heating-7PLN-v2-1
College	Heating	Ductless Mini Split Heat Pump	tonCool	New	515.60	20	\$979.24	15%	25%	\$132.33	49.64	47.14	DHP-Cooling/Heating-7PLN-v2-1
College	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.47	5	\$0.75	30%	40%	\$98.86	26.26	25.00	STAT_WIFI-AII-7PLN-v2-1
College	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.03	5	\$0.75	30%	40%	\$98.86	19.86	18.89	STAT_WIFI-AII-7PLN-v2-1
College	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.20	5	\$0.75	30%	40%	\$98.86	12.76	12.11	STAT_WIFI-AII-7PLN-v2-1

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College	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	167.84	10	\$8.63	25%	65%	\$7.16	14.27	13.35	DHW_AER-Water Heating-ILTRM-v4.0-1
College	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	184.43	10	\$17.56	25%	65%	(\$84.41)	7.84	7.34	DHW_SHW-Water Heating-RTF-v3.1-4
College	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	45.70	10	\$16.82	25%	65%	(\$114.51)	2.28	2.14	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
College	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	15%	20%	\$8.34	17.03	16.42	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
College	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	645.70	15	\$15.38	1%	75%	\$2.70	61.74	58.34	AEG-BEST
College	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	687.89	4	\$75.87	25%	40%	(\$81.93)	12.61	11.73	DHW_SPR-Water Heating-RTF-v2.4-1
College	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	5.64	5.23	DHW_STBK-Water Heating-ILTRM-v4.0-4
College	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,062.58	87.79	83.03	AEG-BEST
College	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.48	15	\$0.36	11%	23%	\$85.15	308.53	298.96	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.68	15	\$0.60	11%	23%	\$100.36	431.94	418.54	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
College	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	302.08	15	\$56.14	1%	3%	\$21.30	3.27	3.11	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	54.00	15	\$65.99	1%	3%	\$140.07	0.14	0.14	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
College	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
College	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	3,319.73	11	\$26.48	15%	30%	\$1.07	50.80	48.16	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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College	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	339.94	16	\$1,864.95	5%	15%	\$604.42	41.70	39.73	CLTG_BILVL-Interior Lighting-7PLN-v3-1
College	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.49	9	\$0.65	15%	25%	\$197.28	37.77	35.71	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
College	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	45.11	8	\$56.85	15%	25%	\$204.72	18.55	17.52	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
College	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	56.41	7	\$3,486.31	15%	30%	\$9,999.00	31.51	29.72	CLTG_EXT_PV-Exterior Lighting-AEG-2
College	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	13.59	12	\$50.74	4%	25%	\$475.76	0.55	0.52	RFG_ASH-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	4.88	4	\$24.51	4%	25%	\$1,518.15	0.06	0.06	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
College	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	21.71	15	\$347.21	0%	0%	\$1,862.07	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	16.10	2	\$10.74	4%	25%	\$487.28	0.03	0.05	RFG_STR-Refrigeration-7PLN-v6-1
College	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	0.51	15	\$508.61	2%	13%	\$9,999.00	3.23	3.09	RFG_HECOMP-Refrigeration-AEO17-3
College	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	8.99	15	\$5,552.98	2%	13%	\$9,999.00	4.73	4.52	RFG_HECOMP-Refrigeration-AEO17-5
College	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	68.19	15	\$305.13	4%	25%	\$1,145.81	2.87	2.74	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
College	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	273.07	15	\$539.09	2%	13%	\$229.86	4.31	4.12	RFG_EVAPCOND-Refrigeration-PGE-R2-18
College	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	573.73	10	\$449.00	0%	0%	\$112.01	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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College	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	30.89	16	\$153.90	4%	25%	\$573.95	0.46	0.45	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
College	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	11.11	15	\$135.00	2%	13%	\$1,444.23	0.02	0.02	RFG_PMSM-Refrigeration-CALTF-v1.12-1
College	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	202.87	16	\$105.92	4%	25%	\$70.07	0.86	0.89	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
College	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	156.17	10	\$521.11	4%	25%	\$567.89	0.52	0.55	RFG_DDEF-Refrigeration-VTTRM-1
College	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.84	8	\$647.70	4%	25%	\$9,999.00	0.01	0.02	RFG_ASH-Refrigeration-NMTRM-2016-1
College	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	116.24	12	\$5,648.09	4%	25%	\$6,366.30	3.28	3.13	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
College	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.09	8	\$15.90	0%	0%	\$420.20	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
College	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.63	8	\$3.87	0%	0%	\$992.21	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
College	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.19	5	\$49.37	0%	0%	\$5,021.81	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
College	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,552.15	5	\$288.64	25%	75%	\$41.43	2.25	2.10	VEND_CTRL-Miscellaneous-SCE-17R0-41
College	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	3,472.00	18	\$8,815.42	25%	50%	\$264.27	67.66	65.57	COOK_EXHD-Food Preparation-7PLN-v3-10
College	Cooling	Lodging - Guest Room Controls	LodgUnit	New	217.12	15	\$335.00	0%	0%	\$54.90	0.00	0.00	AEG - BEST
College	Heating	Lodging - Guest Room Controls	LodgUnit	New	474.02	15	\$335.00	0%	0%	\$54.90	0.00	0.00	AEG - BEST

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College	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	23.45	4	\$37.32	10%	50%	\$397.44	9.98	8.44	SMARTSTRIP-Electronics-RTF-v3.2-1
College	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
College	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.03	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$26.57	0.00	0.00	com-datacenters-7p_v5p.xlsx
College	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,528.60	18	\$4,231.40	0%	5%	\$174.17	8.16	7.91	VVLABHD-HVAC - Ventilation-7PLN-v2-1
College	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	663.37	12	\$2,098.57	5%	7%	\$403.23	0.06	0.06	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
College	Miscellaneous	Pool Pump - Timer	perBldg	New	135.76	10	\$19.59	15%	75%	\$20.09	3.39	3.27	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
College	Miscellaneous	Pool Heater - Night Covers	perBldg	New	62.87	5	\$37,813.23	15%	75%	\$9,999.00	0.26	0.25	PL_COV-Water Heating-SCG-R0-62
College	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.29	0%	5%	\$4,447.57	0.30	0.28	CW_OZON-Water Heating-ILTRM-v4.0-2
College	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	171.86	7	\$423.28	0%	5%	(\$494.78)	0.14	0.13	CW-Water Heating-RTF-v5.1-12
College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	2.98	7	\$423.28	0%	5%	(\$494.78)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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College	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	2.98	7	\$423.28	0%	5%	(\$494.78)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
College	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	27,002.68	15	\$1,114.41	0%	5%	\$40.76	34.95	33.02	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	151.48	15	\$1,114.41	0%	5%	\$40.76	0.03	0.03	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
College	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,320.77	6	\$37.07	1%	3%	\$5.48	1.83	1.76	ESTAR_WC-Miscellaneous-7PLN-v6-1
College	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.10	0%	5%	\$891.61	0.63	0.60	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
College	Cooling	Advanced New Construction Designs	sqft	New	0.95	25	\$4.24	10%	30%	\$79.95	258.20	251.22	ADVNC-AII-RSRCH-1
College	Heating	Advanced New Construction Designs	sqft	New	2.06	25	\$4.24	10%	30%	\$79.95	195.26	189.92	ADVNC-AII-RSRCH-1
College	Ventilation	Advanced New Construction Designs	sqft	New	0.41	25	\$4.24	10%	30%	\$79.95	125.42	121.92	ADVNC-AII-RSRCH-1
College	Water Heating	Advanced New Construction Designs	sqft	New	0.54	25	\$4.24	10%	30%	\$79.95	104.75	101.83	ADVNC-AII-RSRCH-1
College	Interior Lighting	Advanced New Construction Designs	sqft	New	0.96	25	\$4.24	10%	30%	\$79.95	1,141.97	1,114.18	ADVNC-AII-RSRCH-1
College	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	30%	\$79.95	242.99	237.05	ADVNC-AII-RSRCH-1
College	Cooling	Strategic Energy Management	sqft	New	0.15	3	\$0.03	3%	29%	\$11.65	12.62	11.78	COM_SEM-HVAC-AEG-1
College	Heating	Strategic Energy Management	sqft	New	0.32	3	\$0.03	3%	29%	\$11.65	9.54	8.89	COM_SEM-HVAC-AEG-1
College	Ventilation	Strategic Energy Management	sqft	New	0.06	3	\$0.03	3%	29%	\$11.65	6.13	5.69	COM_SEM-HVAC-AEG-1
College	Water Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.03	3%	29%	\$11.65	5.12	4.76	COM_SEM-Water Heating-AEG-1

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College	Interior Lighting	Strategic Energy Management	sqft	New	0.15	3	\$0.03	3%	29%	\$11.65	13.95	13.12	COM_SEM-Lighting-AEG-1
College	Exterior Lighting	Strategic Energy Management	sqft	New	0.04	3	\$0.03	3%	29%	\$11.65	3.96	3.71	COM_SEM-Lighting-AEG-1
College	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.03	3%	29%	\$11.65	0.49	0.47	COM_SEM-Refrigeration-AEG-1
College	Office Equipment	Strategic Energy Management	sqft	New	0.03	3	\$0.03	3%	29%	\$11.65	3.30	2.78	COM_SEM-Office Equipment-AEG-1
College	Cooling	Commissioning	sqft	New	0.20	3	\$0.62	10%	46%	\$207.87	150.27	144.68	COM_CX-HVAC-AEG-1
College	Heating	Commissioning	sqft	New	0.44	3	\$0.62	10%	46%	\$207.87	113.64	109.34	COM_CX-HVAC-AEG-1
College	Ventilation	Commissioning	sqft	New	0.09	3	\$0.62	10%	46%	\$207.87	72.99	70.16	COM_CX-HVAC-AEG-1
College	Water Heating	Commissioning	sqft	New	0.04	3	\$0.62	10%	46%	\$207.87	20.32	19.53	COM_CX-Water Heating-AEG-1
College	Interior Lighting	Commissioning	sqft	New	0.17	3	\$0.62	10%	46%	\$207.87	553.84	535.30	COM_CX-Lighting-AEG-1
College	Exterior Lighting	Commissioning	sqft	New	0.05	3	\$0.62	10%	46%	\$207.87	117.84	113.86	COM_CX-Lighting-AEG-1
College	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.62	10%	46%	\$207.87	12.52	12.11	COM_CX-Refrigeration-AEG-1
College	Cooling	Retrocommissioning	sqft	New	0.20	3	\$0.20	0%	0%	\$65.98	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Heating	Retrocommissioning	sqft	New	0.44	3	\$0.20	0%	0%	\$65.98	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Ventilation	Retrocommissioning	sqft	New	0.09	3	\$0.20	0%	0%	\$65.98	0.00	0.00	COM_RCX-HVAC-AEG-1
College	Water Heating	Retrocommissioning	sqft	New	0.04	3	\$0.20	0%	0%	\$65.98	0.00	0.00	COM_RCX-Water Heating-AEG-1
College	Interior Lighting	Retrocommissioning	sqft	New	0.17	3	\$0.20	0%	0%	\$65.98	0.00	0.00	COM_RCX-Lighting-AEG-1
College	Exterior Lighting	Retrocommissioning	sqft	New	0.05	3	\$0.20	0%	0%	\$65.98	0.00	0.00	COM_RCX-Lighting-AEG-1

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College	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.20	0%	0%	\$65.98	0.00	0.00	COM_RCX-Refrigeration-AEG-1
College	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$103.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.04	10	\$1.12	0%	0%	\$4,220.71	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$8,345.12	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
College	Miscellaneous	LED Signage	perBldg	New	97.69	16	\$75.53	20%	75%	\$84.90	2.06	1.94	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
College	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,061.34	25	\$1,618.35	0%	75%	\$148.57	33.09	32.10	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$239.98	18.14	17.84	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	Existing	0.30	45	\$0.84	15%	35%	\$239.98	73.08	72.22	Building Energy Simulation Tool
School	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$239.98	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	Existing	0.34	20	\$0.86	15%	35%	\$260.63	184.80	181.75	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$260.63	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$260.63	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.25	20	\$0.81	45%	50%	\$681.64	68.39	67.26	Building Energy Simulation Tool

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School	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.11	20	\$0.81	45%	50%	\$681.64	-6.87	-6.79	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.02	20	\$0.81	45%	50%	\$681.64	-7.37	-7.14	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.24	45	\$1.70	15%	35%	\$719.69	-78.61	-77.32	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.38	45	\$1.70	15%	35%	\$719.69	28.97	28.63	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$1.70	15%	35%	\$719.69	31.09	30.12	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	15.64	18	\$0.59	15%	50%	\$7.50	117.67	115.74	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-6.12	18	\$0.59	15%	50%	\$7.50	-10.42	-10.30	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-1.05	18	\$0.59	15%	50%	\$7.50	-11.18	-10.84	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.13	30	\$37.07	48%	48%	\$121.10	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	Existing	21.38	30	\$37.07	48%	48%	\$121.10	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	2.11	30	\$37.07	48%	48%	\$121.10	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	10,919.07	10	\$914.46	15%	75%	\$12.06	253.29	246.21	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	313.77	15	\$248.07	15%	75%	\$92.62	1,012.21	983.93	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	723.09	15	\$263.92	15%	75%	\$42.76	233.27	226.75	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST

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School	Cooling	HVAC - Economizer	HP cool	Existing	68.99	5	\$267.96	18%	75%	\$891.49	561.86	544.51	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.25	15	\$0.05	5%	15%	\$23.49	148.87	145.84	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.69	14	\$5.25	3%	75%	\$939.72	308.48	304.30	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.15	18	\$0.26	15%	20%	\$187.19	55.49	53.78	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	248.91	15	\$189.00	13%	25%	\$87.73	68.26	65.35	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	89.70	15	\$1,273.23	13%	50%	\$1,640.04	77.31	74.02	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.09	15	\$0.08	13%	50%	\$99.08	271.69	260.12	FAN_VSD-Ventilation-MIDATL-v3.0-13
School	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	24%	49%	\$3,071.47	17.35	16.62	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.95	15	\$0.76	8%	16%	\$70.82	101.29	99.92	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.32	15	\$0.76	8%	16%	\$70.82	212.33	203.29	HVAC_DOAS-Heating-7PLN-v5-1
School	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,788.80	15	\$7,501.21	15%	15%	\$75.27	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	8,997.53	15	\$7,501.21	15%	15%	\$75.27	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	31.64	30.53	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	Existing	81.70	15	\$410.87	15%	45%	\$584.40	269.50	262.25	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	Existing	77.66	15	\$698.92	15%	75%	\$1,045.81	494.06	482.83	RTU_PREC-Cooling-XCELCO-2017-18-1

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School	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	139.69	20	\$979.24	15%	25%	\$217.61	9.97	9.90	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	316.82	20	\$979.24	15%	25%	\$217.61	46.85	44.22	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.35	5	\$0.75	30%	40%	\$167.03	190.19	187.05	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.59	5	\$0.75	30%	40%	\$167.03	71.72	70.89	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.10	5	\$0.75	30%	40%	\$167.03	76.96	74.58	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	88.25	10	\$8.63	25%	65%	\$14.02	58.80	56.50	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	96.97	10	\$17.56	25%	65%	(\$165.24)	32.30	31.04	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	24.03	10	\$16.82	25%	65%	(\$224.17)	7.89	7.58	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	20%	\$8.17	35.45	34.40	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	339.52	15	\$15.38	16%	75%	\$5.28	137.53	132.17	AEG-BEST
School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	361.71	4	\$75.87	25%	40%	(\$160.40)	89.10	85.62	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	74.77	71.85	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.12	20	\$258.33	1%	30%	\$2,020.39	238.01	228.73	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.34	15	\$0.36	3%	23%	\$127.96	695.69	685.91	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.47	15	\$0.60	3%	23%	\$150.81	973.97	960.28	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	233.00	15	\$56.14	1%	3%	\$30.13	18.77	19.19	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.30	15	\$65.99	1%	3%	\$154.80	0.44	0.45	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,490.67	11	\$26.48	15%	30%	\$1.50	295.56	291.22	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	255.04	16	\$1,864.95	5%	15%	\$845.73	201.77	198.80	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	0.47	9	\$0.65	15%	25%	\$215.22	268.64	264.51	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	44.47	8	\$56.85	15%	25%	\$216.55	142.78	140.59	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	55.60	7	\$3,486.31	15%	30%	\$9,999.00	267.80	263.69	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	15.31	12	\$50.74	4%	25%	\$441.69	11.51	11.10	RFG_ASH-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	5.68	4	\$24.51	4%	25%	\$1,364.64	2.79	3.10	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	24.52	15	\$347.21	0%	0%	\$1,728.26	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	20.28	2	\$10.74	4%	25%	\$392.36	3.11	4.89	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.58	15	\$508.61	2%	13%	\$9,999.00	59.77	59.30	RFG_HECOMP-Refrigeration-AEO15-4
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	10.16	15	\$5,552.98	2%	13%	\$9,999.00	87.43	86.74	RFG_HECOMP-Refrigeration-AEO15-4

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School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	77.01	15	\$305.13	4%	25%	\$1,063.47	53.04	52.62	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	308.42	15	\$539.09	2%	13%	\$213.34	79.66	79.03	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	648.00	10	\$449.00	0%	0%	\$103.96	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	35.20	16	\$153.90	4%	25%	\$528.64	8.39	8.52	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	12.66	15	\$135.00	2%	13%	\$1,330.21	0.38	0.38	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	241.00	16	\$105.92	4%	25%	\$61.58	15.61	18.71	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	185.52	10	\$521.11	4%	25%	\$499.02	12.01	14.40	RFG_DDEF-Refrigeration-VTTRM-1
School	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	65.04	8	\$18,135.52	4%	25%	\$9,999.00	0.36	0.56	RFG_ADC-Refrigeration-PGE-R6-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	131.28	12	\$605.15	4%	25%	\$633.09	67.81	67.28	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	6.84	8	\$15.90	0%	0%	\$392.45	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	0.70	8	\$3.87	0%	0%	\$926.68	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	2.48	5	\$49.37	0%	0%	\$4,656.14	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,869.36	5	\$288.64	25%	75%	\$36.18	97.87	94.93	VEND_CTRL-Miscellaneous-SCE-17R0-28
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,718.86	18	\$8,815.42	25%	50%	\$544.66	131.86	127.78	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	135.59	15	\$335.00	0%	0%	\$94.34	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	274.29	15	\$335.00	0%	0%	\$94.34	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	15.47	4	\$37.32	10%	50%	\$596.20	122.55	102.24	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$12.45	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,251.81	18	\$4,231.40	0%	0%	\$358.98	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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School	Miscellaneous	Pool Pump - Timer	perBldg	Existing	172.44	10	\$19.59	15%	75%	\$16.34	1.57	1.51	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	38.97	5	\$37,813.23	15%	75%	\$9,999.00	0.07	0.06	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.17	0%	0%	\$5,202.55	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	90.37	7	\$423.28	0%	0%	(\$924.82)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.81	7	\$423.28	0%	0%	(\$924.82)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	3.81	7	\$423.28	0%	0%	(\$924.82)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	14,198.49	15	\$1,114.41	0%	0%	\$79.15	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	200.12	15	\$1,114.41	0%	0%	\$79.15	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	838.60	6	\$37.07	1%	3%	\$8.64	9.85	9.43	ESTAR_WC-Miscellaneous-7PLN-v6-1
School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.07	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	Existing	0.48	25	\$4.24	0%	0%	\$150.43	0.00	0.00	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	Existing	1.08	25	\$4.24	0%	0%	\$150.43	0.00	0.00	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$150.43	0.00	0.00	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	Existing	0.27	25	\$4.24	0%	0%	\$150.43	0.00	0.00	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.68	25	\$4.24	0%	0%	\$150.43	0.00	0.00	ADVNC-AII-RSRCH-1

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School	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$150.43	0.00	0.00	ADVNC-All-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	Existing	0.11	3	\$0.01	2%	22%	\$8.12	129.02	126.39	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	Existing	0.18	3	\$0.01	2%	22%	\$8.12	48.66	48.00	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.01	2%	22%	\$8.12	52.21	49.99	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	Existing	0.04	3	\$0.01	2%	22%	\$8.12	35.57	34.19	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	Existing	0.11	3	\$0.01	2%	22%	\$8.12	170.12	172.32	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.01	2%	22%	\$8.12	53.00	52.19	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.01	2%	22%	\$8.12	23.03	22.85	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.01	2%	22%	\$8.12	40.12	33.47	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	Existing	0.15	3	\$0.26	0%	0%	\$136.77	0.00	0.00	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	Existing	0.25	3	\$0.26	0%	0%	\$136.77	0.00	0.00	COM_CX-HVAC-AEG-1
School	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.26	0%	0%	\$136.77	0.00	0.00	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	Existing	0.02	3	\$0.26	0%	0%	\$136.77	0.00	0.00	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	Existing	0.13	3	\$0.26	0%	0%	\$136.77	0.00	0.00	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.26	0%	0%	\$136.77	0.00	0.00	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	Existing	0.03	3	\$0.26	0%	0%	\$136.77	0.00	0.00	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	Existing	0.15	3	\$0.08	10%	47%	\$43.41	330.50	323.75	COM_RCX-HVAC-AEG-1

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School	Heating	Retrocommissioning	sqft	Existing	0.25	3	\$0.08	10%	47%	\$43.41	124.64	122.95	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.08	10%	47%	\$43.41	133.75	128.05	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	Existing	0.02	3	\$0.08	10%	47%	\$43.41	30.37	29.19	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	Existing	0.13	3	\$0.08	10%	47%	\$43.41	363.13	367.84	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.08	10%	47%	\$43.41	113.14	111.40	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	Existing	0.03	3	\$0.08	10%	47%	\$43.41	98.33	97.56	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.09	10	\$0.09	0%	0%	\$146.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.11	10	\$1.12	0%	0%	\$1,586.04	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.03	3	\$0.24	0%	0%	\$3,135.90	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.05	10	\$3.24	0%	0%	\$9,404.65	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	Existing	89.35	16	\$75.53	20%	75%	\$92.82	15.18	14.19	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,081.32	25	\$1,764.04	0%	0%	\$163.54	0.00	0.00	WHP Analysis
School	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,324.03	0.00	0.00	Building Energy Simulation Tool
School	Heating	Insulation - Ceiling	sqft roof	New	0.06	45	\$0.84	15%	50%	\$1,324.03	8.18	7.95	Building Energy Simulation Tool

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School	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$1,324.03	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Insulation - Ducting	sqft duct	New	0.22	20	\$0.86	15%	50%	\$399.28	70.24	68.21	Building Energy Simulation Tool
School	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$399.28	0.00	0.00	Building Energy Simulation Tool
School	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$399.28	0.00	0.00	Building Energy Simulation Tool
School	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.07	20	\$0.81	45%	50%	\$1,881.48	6.57	6.38	Building Energy Simulation Tool
School	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$1,881.48	-0.50	-0.49	Building Energy Simulation Tool
School	Ventilation	Building Shell - Cool Roofs	sqft roof	New	0.00	20	\$0.81	45%	50%	\$1,881.48	-0.57	-0.56	Building Energy Simulation Tool
School	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.02	45	\$1.70	15%	50%	\$6,106.75	-3.13	-3.04	Building Energy Simulation Tool
School	Heating	Insulation - Wall Cavity	sqft wall	New	0.03	45	\$1.70	15%	50%	\$6,106.75	1.54	1.49	Building Energy Simulation Tool
School	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$6,106.75	1.76	1.71	Building Energy Simulation Tool
School	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	10.05	18	\$0.59	15%	35%	\$25.52	14.46	14.03	Building Energy Simulation Tool
School	Heating	HVAC - Duct Repair and Sealing	tonCool	New	-6.42	18	\$0.59	15%	35%	\$25.52	-2.11	-2.05	Building Energy Simulation Tool
School	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	-1.21	18	\$0.59	15%	35%	\$25.52	-2.41	-2.34	Building Energy Simulation Tool
School	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.09	30	\$37.07	66%	66%	\$135.92	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
School	Heating	Windows - High Efficiency Glazing	sqft window	New	19.29	30	\$37.07	66%	66%	\$135.92	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
School	Ventilation	Windows - High Efficiency Glazing	sqft window	New	2.10	30	\$37.07	66%	66%	\$135.92	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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School	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	6,699.09	10	\$914.46	15%	75%	\$19.01	23.72	22.28	AEG-BEST
School	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	192.50	15	\$248.07	15%	75%	\$145.97	117.99	111.50	AEG-BEST
School	Cooling	Chiller - Variable Speed Fans	HP fan	New	443.63	15	\$263.92	15%	75%	\$67.39	27.19	25.69	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
School	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
School	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
School	Cooling	HVAC - Economizer	HP cool	New	44.83	5	\$267.96	18%	75%	\$1,339.47	32.56	30.46	AEG-BEST
School	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.17	15	\$0.05	10%	15%	\$34.09	9.45	8.95	CVENT_NIGHTPURGE-Cooling-E3T-102-1
School	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.62	14	\$5.25	6%	75%	\$1,003.37	49.77	47.11	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.14	18	\$0.26	15%	20%	\$185.42	17.93	17.38	RES_HRV-Cooling-7PLN-v1-2
School	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	246.38	15	\$189.00	19%	25%	\$86.86	5.96	5.63	VENT_PMSM-Ventilation-AEG-2016-2
School	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	88.78	15	\$1,273.23	19%	50%	\$1,623.84	11.84	11.18	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
School	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.09	15	\$0.08	19%	50%	\$98.10	41.60	39.31	AEG-BEST
School	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	24%	49%	\$3,042.46	3.19	3.01	VENT_DCV-Ventilation-7PLN-v5-5
School	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.95	15	\$0.76	8%	16%	\$68.77	19.44	18.42	HVAC_DOAS-Heating-7PLN-v5-25
School	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.31	15	\$0.76	8%	16%	\$68.77	39.03	36.88	HVAC_DOAS-Heating-7PLN-v5-1

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School	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,859.50	15	\$7,501.21	15%	15%	\$85.75	0.00	0.00	HVLS-Cooling-AEG-1
School	Heating	Destratification Fans (HVLS)	Strat Fan	New	8,120.40	15	\$7,501.21	15%	15%	\$85.75	0.00	0.00	HVLS-Heating-AEG-1
School	Cooling	RTU - Maintenance	tonCool	New	5.99	3	\$33.20	15%	45%	\$1,887.57	0.92	0.86	RTU_MNT-Cooling-PGE-R2-1
School	Cooling	RTU - Advanced Controls	tonCool	New	55.95	15	\$410.87	15%	45%	\$841.42	57.31	55.14	RTU_CTRL-Cooling-RTF-1.1-1
School	Cooling	RTU - Evaporative Precooler	tonCool	New	53.18	15	\$698.92	15%	75%	\$1,505.75	127.72	123.90	RTU_PREC-Cooling-XCELCO-2017-18-1
School	Cooling	Ductless Mini Split Heat Pump	tonCool	New	111.05	20	\$979.24	15%	25%	\$232.38	1.99	1.89	DHP-Cooling/Heating-7PLN-v2-1
School	Heating	Ductless Mini Split Heat Pump	tonCool	New	309.04	20	\$979.24	15%	25%	\$232.38	10.44	9.91	DHP-Cooling/Heating-7PLN-v2-1
School	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.24	5	\$0.75	30%	40%	\$194.15	13.70	13.04	STAT_WIFI-All-7PLN-v2-1
School	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.53	5	\$0.75	30%	40%	\$194.15	7.05	6.72	STAT_WIFI-All-7PLN-v2-1
School	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.10	5	\$0.75	30%	40%	\$194.15	8.07	7.66	STAT_WIFI-All-7PLN-v2-1
School	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	83.98	10	\$8.63	25%	65%	\$14.31	7.06	6.60	DHW_AER-Water Heating-ILTRM-v4.0-1
School	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	92.28	10	\$17.56	25%	65%	(\$168.69)	3.88	3.63	DHW_SHW-Water Heating-RTF-v3.1-4
School	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	22.87	10	\$16.82	25%	65%	(\$228.85)	1.13	1.06	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
School	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	15%	20%	\$8.34	8.54	8.23	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
School	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	323.08	15	\$15.38	1%	75%	\$5.39	30.64	28.96	AEG-BEST

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School	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	344.19	4	\$75.87	25%	40%	(\$163.75)	6.25	5.81	DHW_SPR-Water Heating-RTF-v2.4-1
School	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	2.79	2.59	DHW_STBK-Water Heating-ILTRM-v4.0-4
School	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,062.58	43.59	41.23	AEG-BEST
School	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.31	15	\$0.36	11%	23%	\$131.91	258.15	249.84	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.44	15	\$0.60	11%	23%	\$155.46	361.41	349.78	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
School	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	215.97	15	\$56.14	1%	3%	\$31.02	2.84	2.74	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.78	15	\$65.99	1%	3%	\$146.40	0.07	0.06	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
School	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
School	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,295.71	11	\$26.48	15%	30%	\$1.55	44.97	42.50	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
School	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	235.08	16	\$1,864.95	5%	15%	\$872.91	36.93	35.09	CLTG_BILVL-Interior Lighting-7PLN-v3-1
School	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	0.44	9	\$0.65	15%	25%	\$221.01	36.04	33.94	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
School	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	41.24	8	\$56.85	15%	25%	\$222.38	17.70	16.65	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
School	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	51.56	7	\$3,486.31	15%	30%	\$9,999.00	30.04	28.22	CLTG_EXT_PV-Exterior Lighting-AEG-2
School	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	14.35	12	\$50.74	4%	25%	\$450.53	1.84	1.73	RFG_ASH-Refrigeration-7PLN-v6-1

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School	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	5.15	4	\$24.51	4%	25%	\$1,437.80	0.20	0.20	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
School	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	22.93	15	\$347.21	0%	0%	\$1,763.38	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	17.05	2	\$10.74	4%	25%	\$461.62	0.11	0.16	RFG_STR-Refrigeration-7PLN-v6-1
School	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.54	15	\$508.61	2%	13%	\$9,999.00	10.76	10.29	RFG_HECOMP-Refrigeration-AEO17-3
School	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	9.50	15	\$5,552.98	2%	13%	\$9,999.00	15.74	15.05	RFG_HECOMP-Refrigeration-AEO17-5
School	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	72.02	15	\$305.13	4%	25%	\$1,085.08	9.55	9.13	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
School	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	288.43	15	\$539.09	2%	13%	\$217.67	14.34	13.71	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	605.99	10	\$449.00	0%	0%	\$106.07	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
School	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	32.63	16	\$153.90	4%	25%	\$543.54	1.55	1.49	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
School	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	11.73	15	\$135.00	2%	13%	\$1,367.70	0.07	0.07	RFG_PMSM-Refrigeration-CALTF-v1.12-1
School	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	214.56	16	\$105.92	4%	25%	\$66.37	2.86	2.97	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
School	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	165.17	10	\$521.11	4%	25%	\$537.87	1.73	1.82	RFG_DDEF-Refrigeration-VTTRM-1

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School	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	1.95	8	\$647.70	4%	25%	\$9,999.00	0.04	0.05	RFG_ASH-Refrigeration-NMTRM-2016-1
School	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	122.77	12	\$5,648.09	4%	25%	\$6,028.88	10.91	10.41	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
School	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	6.43	8	\$15.90	0%	0%	\$397.92	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
School	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	0.66	8	\$3.87	0%	0%	\$939.60	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
School	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	2.31	5	\$49.37	0%	0%	\$4,755.55	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
School	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,737.59	5	\$288.64	25%	75%	\$37.01	8.37	7.80	VEND_CTRL-Miscellaneous-SCE-17R0-41
School	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,700.65	18	\$8,815.42	25%	50%	\$539.52	42.62	41.31	COOK_EXHD-Food Preparation-7PLN-v3-10
School	Cooling	Lodging - Guest Room Controls	LodgUnit	New	108.56	15	\$335.00	0%	0%	\$100.26	0.00	0.00	AEG - BEST
School	Heating	Lodging - Guest Room Controls	LodgUnit	New	269.90	15	\$335.00	0%	0%	\$100.26	0.00	0.00	AEG - BEST
School	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	15.11	4	\$37.32	10%	50%	\$611.40	8.33	6.94	SMARTSTRIP-Electronics-RTF-v3.2-1
School	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
School	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.54	0.00	0.00	com-datacenters-7p_v5p.xlsx

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School	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.54	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.54	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$5.79	0.00	0.00	com-datacenters-7p_v5p.xlsx
School	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	1,238.56	18	\$4,231.40	0%	0%	\$355.59	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
School	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
School	Miscellaneous	Pool Pump - Timer	perBldg	New	165.25	10	\$19.59	15%	75%	\$16.51	0.35	0.34	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
School	Miscellaneous	Pool Heater - Night Covers	perBldg	New	38.26	5	\$37,813.23	15%	75%	\$9,999.00	0.01	0.01	PL_COV-Water Heating-SCG-R0-62
School	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.16	0%	0%	\$4,954.90	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
School	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	85.99	7	\$423.28	0%	0%	(\$943.53)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.63	7	\$423.28	0%	0%	(\$943.53)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	3.63	7	\$423.28	0%	0%	(\$943.53)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
School	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	13,510.81	15	\$1,114.41	0%	0%	\$80.82	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	184.37	15	\$1,114.41	0%	0%	\$80.82	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
School	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	834.87	6	\$37.07	1%	3%	\$8.67	1.50	1.44	ESTAR_WC-Miscellaneous-7PLN-v6-1

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School	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.06	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
School	Cooling	Advanced New Construction Designs	sqft	New	0.48	25	\$4.24	10%	25%	\$144.54	102.20	99.45	ADVNC-AII-RSRCH-1
School	Heating	Advanced New Construction Designs	sqft	New	1.07	25	\$4.24	10%	25%	\$144.54	52.61	51.20	ADVNC-AII-RSRCH-1
School	Ventilation	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$144.54	60.18	58.51	ADVNC-AII-RSRCH-1
School	Water Heating	Advanced New Construction Designs	sqft	New	0.27	25	\$4.24	10%	25%	\$144.54	39.91	38.80	ADVNC-AII-RSRCH-1
School	Interior Lighting	Advanced New Construction Designs	sqft	New	0.68	25	\$4.24	10%	25%	\$144.54	762.60	745.71	ADVNC-AII-RSRCH-1
School	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	25%	\$144.54	178.06	173.46	ADVNC-AII-RSRCH-1
School	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.01	2%	22%	\$6.81	5.00	4.67	COM_SEM-HVAC-AEG-1
School	Heating	Strategic Energy Management	sqft	New	0.17	3	\$0.01	2%	22%	\$6.81	2.57	2.40	COM_SEM-HVAC-AEG-1
School	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.01	2%	22%	\$6.81	2.95	2.74	COM_SEM-HVAC-AEG-1
School	Water Heating	Strategic Energy Management	sqft	New	0.04	3	\$0.01	2%	22%	\$6.81	1.95	1.81	COM_SEM-Water Heating-AEG-1
School	Interior Lighting	Strategic Energy Management	sqft	New	0.11	3	\$0.01	2%	22%	\$6.81	9.33	8.96	COM_SEM-Lighting-AEG-1
School	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.01	2%	22%	\$6.81	2.90	2.71	COM_SEM-Lighting-AEG-1
School	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.01	2%	22%	\$6.81	1.27	1.20	COM_SEM-Refrigeration-AEG-1
School	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.01	2%	22%	\$6.81	2.12	1.76	COM_SEM-Office Equipment-AEG-1
School	Cooling	Commissioning	sqft	New	0.10	3	\$0.19	10%	47%	\$112.67	81.12	78.12	COM_CX-HVAC-AEG-1
School	Heating	Commissioning	sqft	New	0.23	3	\$0.19	10%	47%	\$112.67	41.76	40.22	COM_CX-HVAC-AEG-1

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School	Ventilation	Commissioning	sqft	New	0.04	3	\$0.19	10%	47%	\$112.67	47.77	45.92	COM_CX-HVAC-AEG-1
School	Water Heating	Commissioning	sqft	New	0.02	3	\$0.19	10%	47%	\$112.67	10.56	10.15	COM_CX-Water Heating-AEG-1
School	Interior Lighting	Commissioning	sqft	New	0.12	3	\$0.19	10%	47%	\$112.67	504.40	490.25	COM_CX-Lighting-AEG-1
School	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.19	10%	47%	\$112.67	117.77	113.54	COM_CX-Lighting-AEG-1
School	Refrigeration	Commissioning	sqft	New	0.03	3	\$0.19	10%	47%	\$112.67	107.74	104.27	COM_CX-Refrigeration-AEG-1
School	Cooling	Retrocommissioning	sqft	New	0.10	3	\$0.06	0%	0%	\$35.76	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Heating	Retrocommissioning	sqft	New	0.23	3	\$0.06	0%	0%	\$35.76	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.06	0%	0%	\$35.76	0.00	0.00	COM_RCX-HVAC-AEG-1
School	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.06	0%	0%	\$35.76	0.00	0.00	COM_RCX-Water Heating-AEG-1
School	Interior Lighting	Retrocommissioning	sqft	New	0.12	3	\$0.06	0%	0%	\$35.76	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.06	0%	0%	\$35.76	0.00	0.00	COM_RCX-Lighting-AEG-1
School	Refrigeration	Retrocommissioning	sqft	New	0.03	3	\$0.06	0%	0%	\$35.76	0.00	0.00	COM_RCX-Refrigeration-AEG-1
School	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.09	10	\$0.09	0%	0%	\$150.79	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.10	10	\$1.12	0%	0%	\$1,618.27	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.03	3	\$0.24	0%	0%	\$3,199.62	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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School	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.05	10	\$3.24	0%	0%	\$9,595.75	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
School	Miscellaneous	LED Signage	perBldg	New	88.96	16	\$75.53	20%	75%	\$93.23	2.39	2.26	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
School	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,157.46	25	\$1,764.92	0%	0%	\$148.57	0.00	0.00	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	Existing	0.00	45	\$0.84	15%	35%	\$490.33	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$0.84	15%	35%	\$490.33	118.23	113.53	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.01	45	\$0.84	15%	35%	\$490.33	6.30	6.09	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.31	20	\$0.81	45%	50%	\$532.19	67.28	66.71	Building Energy Simulation Tool
Lodging	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.10	20	\$0.81	45%	50%	\$532.19	-19.70	-18.92	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.04	20	\$0.81	45%	50%	\$532.19	-11.90	-11.50	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.01	45	\$1.70	15%	35%	\$1,596.37	-2.27	-2.25	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	Existing	0.07	45	\$1.70	15%	35%	\$1,596.37	21.55	20.70	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.03	45	\$1.70	15%	35%	\$1,596.37	13.02	12.58	Building Energy Simulation Tool

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Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	3.70	30	\$37.07	48%	48%	\$357.54	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	Existing	4.85	30	\$37.07	48%	48%	\$357.54	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.31	30	\$37.07	48%	48%	\$357.54	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,130.46	10	\$914.46	15%	75%	\$20.86	29.66	27.93	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	130.17	15	\$248.07	15%	75%	\$216.79	87.58	82.49	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	320.03	15	\$263.92	15%	75%	\$93.81	21.53	20.28	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	46.27	15	\$248.07	15%	75%	\$607.32	24.57	23.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	10,991.05	10	\$1,796.53	15%	75%	\$67.71	41.97	39.35	AEG-BEST
Lodging	Cooling	HVAC - Economizer	HP cool	Existing	82.26	5	\$267.96	18%	75%	\$741.52	137.75	132.41	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.31	15	\$0.05	5%	15%	\$19.82	144.62	143.50	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.73	14	\$5.25	3%	75%	\$852.20	465.45	438.84	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.18	18	\$0.26	15%	20%	\$151.35	47.72	46.12	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	2,065.19	15	\$189.00	13%	25%	\$10.52	57.96	55.23	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	744.19	15	\$1,273.23	13%	50%	\$196.68	65.64	62.55	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.11	15	\$0.01	13%	50%	\$11.88	230.69	219.83	FAN_VSD-Ventilation-MIDATL-v3.0-13
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	3%	21%	\$2,483.33	11.04	10.52	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.43	15	\$0.76	1%	7%	\$106.47	114.52	107.97	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.39	15	\$0.76	1%	7%	\$106.47	135.09	128.73	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,347.97	15	\$7,501.21	15%	30%	\$117.74	204.88	203.28	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	4,056.98	15	\$7,501.21	15%	30%	\$117.74	232.44	219.15	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	6.49	6.26	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	Existing	163.67	15	\$410.87	15%	45%	\$291.72	112.29	109.28	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	Existing	155.58	15	\$698.92	15%	75%	\$522.04	207.02	202.33	RTU_PREC-Cooling-XCELCO-2017-18-1
Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	279.84	20	\$1,419.90	15%	75%	\$331.18	936.36	929.59	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	163.39	20	\$1,419.90	15%	75%	\$331.18	791.75	747.38	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.42	5	\$0.75	30%	40%	\$212.02	187.12	185.53	STAT_WIFI-AII-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.27	5	\$0.75	30%	40%	\$212.02	109.60	105.24	STAT_WIFI-AII-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.12	5	\$0.75	30%	40%	\$212.02	66.18	63.97	STAT_WIFI-AII-7PLN-v2-1

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Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	438.14	10	\$8.63	25%	65%	\$2.82	119.64	114.97	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	481.43	10	\$17.56	25%	65%	(\$33.29)	65.73	63.16	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	119.29	10	\$16.82	25%	65%	(\$45.16)	16.10	15.47	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	20%	\$8.17	73.22	71.08	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	1,685.72	15	\$15.38	16%	75%	\$1.06	280.51	269.58	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	1,795.69	4	\$75.87	25%	40%	(\$32.31)	181.71	174.63	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	152.48	146.54	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.12	20	\$258.33	1%	30%	\$2,019.97	485.51	466.60	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.36	3%	23%	\$174.15	337.21	350.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.35	15	\$0.60	3%	23%	\$205.25	472.09	490.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	433.82	15	\$56.14	1%	3%	\$17.24	12.74	14.26	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.31	15	\$65.99	1%	3%	\$164.87	0.32	0.36	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	750.55	11	\$26.48	15%	30%	\$4.98	61.11	60.09	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	76.86	16	\$1,864.95	5%	15%	\$2,804.63	41.71	41.02	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	6.41	9	\$0.65	15%	25%	\$15.73	426.06	418.81	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	206.58	8	\$56.85	15%	25%	\$46.38	226.45	222.60	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	258.31	7	\$3,486.31	15%	30%	\$2,496.81	424.73	417.51	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	57.50	12	\$50.74	0%	0%	\$117.64	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	13.34	4	\$24.51	0%	0%	\$533.71	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	77.11	15	\$347.21	0%	0%	\$537.93	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	76.14	2	\$10.74	0%	0%	\$104.50	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	1.82	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	31.93	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	242.18	15	\$305.13	0%	0%	\$331.01	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	969.87	15	\$539.09	0%	0%	\$66.40	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	2,037.71	10	\$449.00	0%	0%	\$32.36	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	129.53	16	\$153.90	0%	0%	\$138.07	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	46.58	15	\$135.00	0%	0%	\$347.42	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	462.23	16	\$105.92	0%	0%	\$30.31	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	355.83	10	\$521.11	0%	0%	\$245.63	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	244.20	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	412.84	12	\$605.15	0%	0%	\$197.05	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	25.67	8	\$15.90	0%	0%	\$104.52	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	2.64	8	\$3.87	0%	0%	\$246.80	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	9.30	5	\$49.37	0%	0%	\$1,240.07	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,859.51	5	\$288.64	25%	75%	\$36.37	134.62	130.57	VEND_CTRL-Miscellaneous-SCE-17R0-35
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	2,115.33	18	\$8,815.42	25%	50%	\$440.37	113.39	109.60	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	187.33	15	\$335.00	15%	75%	\$135.35	607.44	603.05	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	103.62	15	\$335.00	15%	75%	\$135.35	456.97	431.36	AEG - BEST

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Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.96	4	\$37.32	10%	50%	\$1,510.22	33.76	27.32	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.01	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.88	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$24.52	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	2,567.60	18	\$4,231.40	0%	0%	\$174.14	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Lodging	Miscellaneous	Pool Pump - Timer	perBldg	Existing	249.18	10	\$19.59	15%	75%	\$11.31	11.94	11.50	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	112.61	5	\$63,022.06	15%	75%	\$9,999.00	2.11	1.99	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	perBldg	Existing	743.65	10	\$27,488.34	0%	0%	\$5,629.51	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	448.63	7	\$423.28	0%	0%	(\$179.96)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	27.54	7	\$423.28	0%	0%	(\$179.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	27.54	7	\$423.28	0%	0%	(\$179.96)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	70,488.57	15	\$1,114.41	0%	0%	\$15.85	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	1,445.92	15	\$1,114.41	0%	0%	\$15.85	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,681.29	6	\$37.07	1%	3%	\$1.97	18.00	17.24	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.18	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	Existing	0.71	25	\$4.24	0%	0%	\$126.59	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	Existing	0.51	25	\$4.24	0%	0%	\$126.59	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	Existing	0.23	25	\$4.24	0%	0%	\$126.59	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.24	0%	0%	\$126.59	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.77	25	\$4.24	0%	0%	\$126.59	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.45	25	\$4.24	0%	0%	\$126.59	0.00	0.00	ADVNC-AII-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	Existing	0.13	3	\$0.02	0%	0%	\$9.17	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	Existing	0.08	3	\$0.02	0%	0%	\$9.17	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	Existing	0.04	3	\$0.02	0%	0%	\$9.17	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	Existing	0.13	3	\$0.02	0%	0%	\$9.17	0.00	0.00	COM_SEM-Water Heating-AEG-1

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Lodging	Interior Lighting	Strategic Energy Management	sqft	Existing	0.13	3	\$0.02	0%	0%	\$9.17	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.08	3	\$0.02	0%	0%	\$9.17	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	Existing	0.02	3	\$0.02	0%	0%	\$9.17	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.02	0%	0%	\$9.17	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	Existing	0.18	3	\$0.26	0%	0%	\$135.05	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	Existing	0.11	3	\$0.26	0%	0%	\$135.05	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	Existing	0.05	3	\$0.26	0%	0%	\$135.05	0.00	0.00	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	Existing	0.06	3	\$0.26	0%	0%	\$135.05	0.00	0.00	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	Existing	0.15	3	\$0.26	0%	0%	\$135.05	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	Existing	0.09	3	\$0.26	0%	0%	\$135.05	0.00	0.00	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	Existing	0.05	3	\$0.26	0%	0%	\$135.05	0.00	0.00	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	Existing	0.18	3	\$0.08	15%	76%	\$42.87	529.32	525.19	COM_RCX-HVAC-AEG-1
Lodging	Heating	Retrocommissioning	sqft	Existing	0.11	3	\$0.08	15%	76%	\$42.87	310.05	292.32	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	Existing	0.05	3	\$0.08	15%	76%	\$42.87	187.23	178.41	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	Existing	0.06	3	\$0.08	15%	76%	\$42.87	102.13	98.15	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	Existing	0.15	3	\$0.08	15%	76%	\$42.87	407.23	448.92	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	Existing	0.09	3	\$0.08	15%	76%	\$42.87	295.82	290.78	COM_RCX-Lighting-AEG-1

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Lodging	Refrigeration	Retrocommissioning	sqft	Existing	0.05	3	\$0.08	15%	76%	\$42.87	177.05	172.03	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.10	10	\$0.09	0%	0%	\$139.66	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.16	10	\$1.12	0%	0%	\$1,005.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.04	3	\$0.24	0%	0%	\$1,988.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.08	10	\$3.24	0%	0%	\$5,962.06	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.02	10	\$0.70	0%	0%	\$6,469.52	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	Existing	81.42	16	\$75.53	20%	75%	\$101.86	5.67	5.30	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	2,483.02	25	\$4,050.74	0%	75%	\$163.54	126.67	121.85	WHP Analysis
Lodging	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$2,188.05	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ceiling	sqft roof	New	0.03	45	\$0.84	15%	50%	\$2,188.05	13.11	12.73	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$2,188.05	0.61	0.60	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.09	20	\$0.81	45%	50%	\$2,272.68	6.01	5.84	Building Energy Simulation Tool

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Lodging	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.04	20	\$0.81	45%	50%	\$2,272.68	-2.18	-2.12	Building Energy Simulation Tool
Lodging	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.02	20	\$0.81	45%	50%	\$2,272.68	-1.28	-1.24	Building Energy Simulation Tool
Lodging	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$9,999.00	0.93	0.90	Building Energy Simulation Tool
Lodging	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$9,999.00	0.54	0.53	Building Energy Simulation Tool
Lodging	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Heating	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.00	18	\$0.59	15%	50%	\$0.00	0.00	0.00	Building Energy Simulation Tool
Lodging	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.08	30	\$37.07	66%	66%	\$387.67	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Lodging	Heating	Windows - High Efficiency Glazing	sqft window	New	4.62	30	\$37.07	66%	66%	\$387.67	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Lodging	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.19	30	\$37.07	66%	66%	\$387.67	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Lodging	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	5,271.50	10	\$914.46	15%	75%	\$24.15	3.20	3.01	AEG-BEST
Lodging	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	111.93	15	\$248.07	15%	75%	\$251.04	11.79	11.14	AEG-BEST
Lodging	Cooling	Chiller - Variable Speed Fans	HP fan	New	275.19	15	\$263.92	15%	75%	\$108.63	2.90	2.74	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lodging	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	43.34	15	\$248.07	15%	75%	\$648.42	3.58	3.38	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lodging	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	9,300.73	10	\$1,796.53	15%	75%	\$80.01	4.43	4.16	AEG-BEST

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Lodging	Cooling	HVAC - Economizer	HP cool	New	76.21	5	\$267.96	18%	75%	\$790.88	9.65	9.05	AEG-BEST
Lodging	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.25	15	\$0.05	10%	15%	\$22.66	10.16	9.61	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Lodging	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.69	14	\$5.25	6%	75%	\$890.65	64.62	61.04	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.16	18	\$0.26	15%	20%	\$165.17	12.07	11.70	RES_HRV-Cooling-7PLN-v1-2
Lodging	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	2,055.76	15	\$189.00	19%	25%	\$10.41	3.96	3.74	VENT_PMSM-Ventilation-AEG-2016-2
Lodging	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	740.80	15	\$1,273.23	19%	50%	\$194.69	7.87	7.43	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Lodging	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.10	15	\$0.01	19%	50%	\$11.76	27.64	26.12	AEG-BEST
Lodging	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	3%	21%	\$2,710.08	1.59	1.50	VENT_DCV-Ventilation-7PLN-v5-5
Lodging	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.45	15	\$0.76	1%	7%	\$107.39	18.92	17.89	HVAC_DOAS-Heating-7PLN-v5-25
Lodging	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.35	15	\$0.76	1%	7%	\$107.39	19.43	18.37	HVAC_DOAS-Heating-7PLN-v5-1
Lodging	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,788.95	15	\$7,501.21	15%	30%	\$127.89	28.78	27.24	HVLS-Cooling-AEG-1
Lodging	Heating	Destratification Fans (HVLS)	Strat Fan	New	3,870.04	15	\$7,501.21	15%	30%	\$127.89	34.69	32.80	HVLS-Heating-AEG-1
Lodging	Cooling	RTU - Maintenance	tonCool	New	8.18	3	\$33.20	15%	45%	\$1,381.96	0.22	0.21	RTU_MNT-Cooling-PGE-R2-1
Lodging	Cooling	RTU - Advanced Controls	tonCool	New	153.11	15	\$410.87	15%	45%	\$307.51	28.11	27.05	RTU_CTRL-Cooling-RTF-1.1-1
Lodging	Cooling	RTU - Evaporative Precooler	tonCool	New	145.54	15	\$698.92	15%	75%	\$550.29	62.90	61.03	RTU_PREC-Cooling-XCELCO-2017-18-1

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Lodging	Cooling	Ductless Mini Split Heat Pump	tonCool	New	222.47	20	\$1,419.90	15%	75%	\$374.17	161.27	153.19	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Heating	Ductless Mini Split Heat Pump	tonCool	New	155.83	20	\$1,419.90	15%	75%	\$374.17	148.95	141.49	DHP-Cooling/Heating-7PLN-v2-1
Lodging	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.35	5	\$0.75	30%	40%	\$233.09	15.02	14.29	STAT_WIFI-All-7PLN-v2-1
Lodging	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.25	5	\$0.75	30%	40%	\$233.09	9.34	8.89	STAT_WIFI-All-7PLN-v2-1
Lodging	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.11	5	\$0.75	30%	40%	\$233.09	5.48	5.21	STAT_WIFI-All-7PLN-v2-1
Lodging	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	416.92	10	\$8.63	25%	65%	\$2.88	12.36	11.57	DHW_AER-Water Heating-ILTRM-v4.0-1
Lodging	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	458.12	10	\$17.56	25%	65%	(\$33.98)	6.79	6.36	DHW_SHW-Water Heating-RTF-v3.1-4
Lodging	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	113.51	10	\$16.82	25%	65%	(\$46.10)	1.99	1.87	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Lodging	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	15%	20%	\$8.34	15.31	14.77	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Lodging	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	1,604.07	15	\$15.38	1%	75%	\$1.09	54.04	51.07	AEG-BEST
Lodging	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	1,708.72	4	\$75.87	25%	40%	(\$32.98)	10.98	10.22	DHW_SPR-Water Heating-RTF-v2.4-1
Lodging	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	4.91	4.56	DHW_STBK-Water Heating-ILTRM-v4.0-4
Lodging	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,062.15	76.90	72.75	AEG-BEST
Lodging	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.23	15	\$0.36	11%	23%	\$183.01	105.70	107.98	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lodging	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.33	15	\$0.60	11%	23%	\$215.69	147.98	151.17	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Lodging	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	400.22	15	\$56.14	1%	3%	\$17.91	1.65	1.72	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	52.54	15	\$65.99	1%	3%	\$160.38	0.04	0.04	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lodging	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lodging	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	691.80	11	\$26.48	15%	30%	\$5.14	8.03	7.58	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lodging	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	70.84	16	\$1,864.95	5%	15%	\$2,894.27	6.61	6.27	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lodging	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	5.92	9	\$0.65	15%	25%	\$16.33	48.93	46.03	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lodging	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	190.69	8	\$56.85	15%	25%	\$48.14	24.01	22.56	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lodging	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	238.43	7	\$3,486.31	15%	30%	\$2,591.69	40.72	38.20	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lodging	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	53.90	12	\$50.74	0%	0%	\$119.99	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	12.42	4	\$24.51	0%	0%	\$547.72	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Lodging	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	72.51	15	\$347.21	0%	0%	\$545.90	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	64.39	2	\$10.74	0%	0%	\$123.00	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	1.71	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Lodging	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	30.03	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

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Lodging	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	227.73	15	\$305.13	0%	0%	\$335.92	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Lodging	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	912.00	15	\$539.09	0%	0%	\$67.39	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	1,916.14	10	\$449.00	0%	0%	\$32.84	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Lodging	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	121.54	16	\$153.90	0%	0%	\$140.37	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Lodging	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	43.71	15	\$135.00	0%	0%	\$353.22	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Lodging	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	419.12	16	\$105.92	0%	0%	\$32.04	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Lodging	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	322.64	10	\$521.11	0%	0%	\$259.62	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Lodging	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	7.38	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Lodging	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	388.21	12	\$5,648.09	0%	0%	\$1,866.41	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Lodging	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	24.15	8	\$15.90	0%	0%	\$105.98	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Lodging	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	2.49	8	\$3.87	0%	0%	\$250.24	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Lodging	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	8.68	5	\$49.37	0%	0%	\$1,266.55	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Lodging	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,728.43	5	\$288.64	25%	75%	\$37.21	9.94	9.26	VEND_CTRL-Miscellaneous-SCE-17R0-41
Lodging	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,909.90	18	\$8,815.42	25%	50%	\$480.58	28.68	27.81	COOK_EXHD-Food Preparation-7PLN-v3-10
Lodging	Cooling	Lodging - Guest Room Controls	LodgUnit	New	149.99	15	\$335.00	15%	75%	\$151.74	104.74	99.47	AEG - BEST
Lodging	Heating	Lodging - Guest Room Controls	LodgUnit	New	100.09	15	\$335.00	15%	75%	\$151.74	86.55	82.20	AEG - BEST
Lodging	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	5.81	4	\$37.32	10%	50%	\$1,567.92	1.94	1.58	SMARTSTRIP-Electronics-RTF-v3.2-1
Lodging	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Lodging	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.01	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.74	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$16.90	0.00	0.00	com-datacenters-7p_v5p.xlsx
Lodging	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,318.25	18	\$4,231.40	0%	0%	\$190.04	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Lodging	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Lodging	Miscellaneous	Pool Pump - Timer	perBldg	New	238.79	10	\$19.59	15%	75%	\$11.42	2.34	2.26	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Lodging	Miscellaneous	Pool Heater - Night Covers	perBldg	New	110.58	5	\$63,022.06	15%	75%	\$9,999.00	0.16	0.15	PL_COV-Water Heating-SCG-R0-62
Lodging	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.51	0%	0%	\$5,347.20	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Lodging	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	426.90	7	\$423.28	0%	0%	(\$183.55)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	26.22	7	\$423.28	0%	0%	(\$183.55)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	26.22	7	\$423.28	0%	0%	(\$183.55)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Lodging	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	67,074.56	15	\$1,114.41	0%	0%	\$16.18	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	1,332.13	15	\$1,114.41	0%	0%	\$16.18	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Lodging	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,664.94	6	\$37.07	1%	3%	\$1.98	2.39	2.29	ESTAR_WC-Miscellaneous-7PLN-v6-1
Lodging	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.16	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Lodging	Cooling	Advanced New Construction Designs	sqft	New	0.71	25	\$4.24	10%	25%	\$122.13	114.04	110.95	ADVNC-AII-RSRCH-1
Lodging	Heating	Advanced New Construction Designs	sqft	New	0.51	25	\$4.24	10%	25%	\$122.13	70.96	69.02	ADVNC-AII-RSRCH-1
Lodging	Ventilation	Advanced New Construction Designs	sqft	New	0.23	25	\$4.24	10%	25%	\$122.13	41.60	40.45	ADVNC-AII-RSRCH-1
Lodging	Water Heating	Advanced New Construction Designs	sqft	New	0.80	25	\$4.24	10%	25%	\$122.13	73.05	71.04	ADVNC-AII-RSRCH-1
Lodging	Interior Lighting	Advanced New Construction Designs	sqft	New	0.76	25	\$4.24	10%	25%	\$122.13	460.16	466.66	ADVNC-AII-RSRCH-1

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Lodging	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.46	25	\$4.24	10%	25%	\$122.13	251.00	244.38	ADVNC-All-RSRCH-1
Lodging	Cooling	Strategic Energy Management	sqft	New	0.11	3	\$0.01	0%	0%	\$8.05	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Heating	Strategic Energy Management	sqft	New	0.08	3	\$0.01	0%	0%	\$8.05	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Ventilation	Strategic Energy Management	sqft	New	0.04	3	\$0.01	0%	0%	\$8.05	0.00	0.00	COM_SEM-HVAC-AEG-1
Lodging	Water Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.01	0%	0%	\$8.05	0.00	0.00	COM_SEM-Water Heating-AEG-1
Lodging	Interior Lighting	Strategic Energy Management	sqft	New	0.12	3	\$0.01	0%	0%	\$8.05	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Exterior Lighting	Strategic Energy Management	sqft	New	0.07	3	\$0.01	0%	0%	\$8.05	0.00	0.00	COM_SEM-Lighting-AEG-1
Lodging	Refrigeration	Strategic Energy Management	sqft	New	0.02	3	\$0.01	0%	0%	\$8.05	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Lodging	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.01	0%	0%	\$8.05	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Lodging	Cooling	Commissioning	sqft	New	0.15	3	\$0.22	15%	76%	\$117.38	148.13	142.59	COM_CX-HVAC-AEG-1
Lodging	Heating	Commissioning	sqft	New	0.11	3	\$0.22	15%	76%	\$117.38	92.17	88.69	COM_CX-HVAC-AEG-1
Lodging	Ventilation	Commissioning	sqft	New	0.05	3	\$0.22	15%	76%	\$117.38	54.03	51.97	COM_CX-HVAC-AEG-1
Lodging	Water Heating	Commissioning	sqft	New	0.06	3	\$0.22	15%	76%	\$117.38	31.63	30.42	COM_CX-Water Heating-AEG-1
Lodging	Interior Lighting	Commissioning	sqft	New	0.14	3	\$0.22	15%	76%	\$117.38	498.08	509.97	COM_CX-Lighting-AEG-1
Lodging	Exterior Lighting	Commissioning	sqft	New	0.08	3	\$0.22	15%	76%	\$117.38	271.69	261.79	COM_CX-Lighting-AEG-1
Lodging	Refrigeration	Commissioning	sqft	New	0.05	3	\$0.22	15%	76%	\$117.38	141.49	136.29	COM_CX-Refrigeration-AEG-1
Lodging	Cooling	Retrocommissioning	sqft	New	0.15	3	\$0.07	0%	0%	\$37.26	0.00	0.00	COM_RCX-HVAC-AEG-1

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Lodging	Heating	Retrocommissioning	sqft	New	0.11	3	\$0.07	0%	0%	\$37.26	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Ventilation	Retrocommissioning	sqft	New	0.05	3	\$0.07	0%	0%	\$37.26	0.00	0.00	COM_RCX-HVAC-AEG-1
Lodging	Water Heating	Retrocommissioning	sqft	New	0.06	3	\$0.07	0%	0%	\$37.26	0.00	0.00	COM_RCX-Water Heating-AEG-1
Lodging	Interior Lighting	Retrocommissioning	sqft	New	0.14	3	\$0.07	0%	0%	\$37.26	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Exterior Lighting	Retrocommissioning	sqft	New	0.08	3	\$0.07	0%	0%	\$37.26	0.00	0.00	COM_RCX-Lighting-AEG-1
Lodging	Refrigeration	Retrocommissioning	sqft	New	0.05	3	\$0.07	0%	0%	\$37.26	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Lodging	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.10	10	\$0.09	0%	0%	\$145.11	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.15	10	\$1.12	0%	0%	\$1,020.38	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.04	3	\$0.24	0%	0%	\$2,017.47	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.07	10	\$3.24	0%	0%	\$6,050.44	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.01	10	\$0.70	0%	0%	\$6,565.43	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Lodging	Miscellaneous	LED Signage	perBldg	New	81.06	16	\$75.53	20%	75%	\$102.32	0.77	0.73	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lodging	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	2,632.20	25	\$4,013.63	0%	75%	\$148.57	38.95	37.80	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	Existing	0.21	45	\$0.84	15%	35%	\$110.47	126.74	124.18	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	Existing	0.44	45	\$0.84	15%	35%	\$110.47	94.21	90.41	Building Energy Simulation Tool

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Warehouse	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.02	45	\$0.84	15%	35%	\$110.47	54.45	52.56	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	Existing	0.08	20	\$0.86	15%	35%	\$868.16	49.42	48.42	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	35%	\$868.16	3.98	3.82	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	35%	\$868.16	2.30	2.22	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.28	20	\$0.81	45%	50%	\$9,999.00	42.25	41.39	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.29	20	\$0.81	45%	50%	\$9,999.00	-15.70	-15.07	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.01	20	\$0.81	45%	50%	\$9,999.00	-9.07	-8.76	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.02	45	\$1.70	15%	35%	\$45.84	1.94	1.90	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	Existing	3.09	45	\$1.70	15%	35%	\$45.84	125.61	120.55	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.12	45	\$1.70	15%	35%	\$45.84	72.60	70.08	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	13.35	18	\$0.59	15%	25%	\$1.79	7.97	7.81	Building Energy Simulation Tool
Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	20.66	18	\$0.59	15%	25%	\$1.79	4.42	4.25	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	0.79	18	\$0.59	15%	25%	\$1.79	2.56	2.47	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	5.60	30	\$37.07	48%	48%	\$114.45	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	Existing	24.26	30	\$37.07	48%	48%	\$114.45	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	0.53	30	\$37.07	48%	48%	\$114.45	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2

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Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	Existing	142.53	5	\$267.96	18%	75%	\$429.69	336.17	324.72	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.28	15	\$0.05	5%	15%	\$21.00	91.58	89.19	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	7.43	14	\$5.25	3%	75%	\$83.41	374.03	352.55	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.04	18	\$0.26	15%	20%	\$603.11	36.39	35.13	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	329.27	15	\$189.00	13%	25%	\$65.90	44.58	42.40	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	118.65	15	\$1,273.23	13%	50%	\$1,231.99	50.49	48.03	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.03	15	\$0.02	13%	50%	\$74.43	177.43	168.78	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	9%	25%	\$9,895.99	7.42	7.06	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.31	15	\$0.76	3%	8%	\$61.57	80.38	75.76	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.10	15	\$0.76	3%	8%	\$61.57	90.75	86.33	HVAC_DOAS-Heating-7PLN-v5-1

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Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,103.08	15	\$7,501.21	15%	75%	\$55.25	518.97	505.39	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	12,445.00	15	\$7,501.21	15%	75%	\$55.25	747.15	704.24	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	14.65	14.13	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	Existing	220.44	15	\$410.87	15%	45%	\$216.58	338.24	329.15	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	Existing	209.55	15	\$698.92	15%	75%	\$387.58	621.26	607.15	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	376.91	20	\$1,958.49	15%	25%	\$190.89	12.61	12.52	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	667.18	20	\$1,958.49	15%	25%	\$190.89	89.26	84.25	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	30%	40%	\$137.08	117.49	115.12	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.82	5	\$0.75	30%	40%	\$137.08	87.33	83.81	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	30%	40%	\$137.08	50.48	48.72	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	65.70	10	\$8.63	25%	65%	\$18.83	28.55	27.43	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	72.19	10	\$17.56	25%	65%	(\$221.98)	15.68	15.07	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	17.89	10	\$16.82	25%	65%	(\$301.14)	3.83	3.69	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	20%	\$8.17	17.30	16.79	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	252.72	15	\$15.38	16%	75%	\$7.10	66.82	64.21	AEG-BEST

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Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	269.26	4	\$75.87	25%	40%	(\$215.47)	43.29	41.60	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	36.33	34.91	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.12	20	\$258.33	1%	30%	\$2,019.97	115.67	111.16	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.29	15	\$0.36	3%	23%	\$150.61	1,237.68	1,227.72	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.40	15	\$0.60	3%	23%	\$177.51	1,732.75	1,718.81	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	607.65	15	\$56.14	1%	3%	\$11.20	31.81	32.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.39	15	\$65.99	1%	3%	\$149.81	1.80	1.81	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	463.52	11	\$26.48	15%	30%	\$8.08	114.47	113.56	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	47.46	16	\$1,864.95	5%	15%	\$4,555.27	78.15	77.52	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	1.23	9	\$0.65	15%	25%	\$82.35	339.32	337.86	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	104.99	8	\$56.85	15%	25%	\$91.99	180.35	179.57	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	131.29	7	\$3,486.31	15%	30%	\$4,951.96	338.27	336.81	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	130.41	12	\$50.74	0%	0%	\$51.87	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1

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Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	34.29	4	\$24.51	0%	0%	\$217.74	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	166.65	15	\$347.21	0%	0%	\$250.92	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	172.69	2	\$10.74	0%	0%	\$46.08	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	3.93	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	69.02	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	523.43	15	\$305.13	0%	0%	\$154.40	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	2,096.18	15	\$539.09	0%	0%	\$30.97	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	4,404.11	10	\$449.00	0%	0%	\$15.09	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	295.34	16	\$153.90	0%	0%	\$61.19	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	106.21	15	\$135.00	0%	0%	\$153.97	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	1,567.03	16	\$105.92	0%	0%	\$10.07	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	1,206.32	10	\$521.11	0%	0%	\$81.61	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	553.84	8	\$18,135.52	0%	0%	\$8,183.45	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1

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Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	892.27	12	\$605.15	0%	0%	\$91.91	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	58.21	8	\$15.90	0%	0%	\$46.09	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	6.00	8	\$3.87	0%	0%	\$108.82	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	21.09	5	\$49.37	0%	0%	\$546.78	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,696.95	5	\$288.64	25%	75%	\$39.85	36.57	35.47	VEND_CTRL-Miscellaneous-SCE-17R0-49
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	530.13	18	\$8,815.42	25%	50%	\$1,754.85	86.48	83.48	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	182.93	15	\$335.00	0%	0%	\$78.31	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	311.98	15	\$335.00	0%	0%	\$78.31	0.00	0.00	AEG - BEST
Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	8.13	4	\$37.32	10%	50%	\$1,074.73	148.66	115.73	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.14	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.14	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.14	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$10.32	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	1,286.95	18	\$4,231.40	0%	0%	\$346.98	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.73	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	67.27	7	\$423.28	0%	0%	(\$1,346.35)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$1,346.35)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$1,346.35)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	10,569.51	15	\$1,114.41	0%	0%	\$107.80	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$107.80	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	4,572.59	6	\$37.07	1%	3%	\$1.58	33.92	32.48	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.15	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2

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Warehouse	Cooling	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$167.84	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	Existing	1.24	25	\$4.24	0%	0%	\$167.84	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	Existing	0.05	25	\$4.24	0%	0%	\$167.84	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	Existing	0.06	25	\$4.24	0%	0%	\$167.84	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$167.84	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.24	0%	0%	\$167.84	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	Existing	0.12	3	\$0.01	3%	11%	\$7.33	31.75	30.92	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	Existing	0.25	3	\$0.01	3%	11%	\$7.33	23.60	22.24	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	Existing	0.01	3	\$0.01	3%	11%	\$7.33	13.64	12.97	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	Existing	0.01	3	\$0.01	3%	11%	\$7.33	6.91	6.64	COM_SEM-Water Heating-AEG-1
Warehouse	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.01	3%	11%	\$7.33	115.43	115.74	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.01	3%	11%	\$7.33	26.78	26.66	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$0.01	3%	11%	\$7.33	5.55	5.44	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.01	3%	11%	\$7.33	19.47	15.16	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	Existing	0.17	3	\$0.28	0%	0%	\$140.68	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	Existing	0.35	3	\$0.28	0%	0%	\$140.68	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	Existing	0.01	3	\$0.28	0%	0%	\$140.68	0.00	0.00	COM_CX-HVAC-AEG-1

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Warehouse	Water Heating	Commissioning	sqft	Existing	0.00	3	\$0.28	0%	0%	\$140.68	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.28	0%	0%	\$140.68	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.28	0%	0%	\$140.68	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	Existing	0.01	3	\$0.28	0%	0%	\$140.68	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	Existing	0.17	3	\$0.09	11%	73%	\$44.65	340.69	331.77	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	Existing	0.35	3	\$0.09	11%	73%	\$44.65	253.23	238.69	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	Existing	0.01	3	\$0.09	11%	73%	\$44.65	146.36	139.22	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	Existing	0.00	3	\$0.09	11%	73%	\$44.65	24.73	23.77	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.09	11%	73%	\$44.65	1,032.23	1,035.01	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.09	11%	73%	\$44.65	239.46	238.43	COM_RCX-Lighting-AEG-1
Warehouse	Refrigeration	Retrocommissioning	sqft	Existing	0.01	3	\$0.09	11%	73%	\$44.65	99.30	97.26	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$181.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.03	10	\$1.12	0%	0%	\$5,554.84	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	Existing	142.80	16	\$75.53	20%	75%	\$58.08	15.25	14.25	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	7,153.36	25	\$11,669.83	0%	0%	\$163.54	0.00	0.00	WHP Analysis
Warehouse	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$219.09	0.00	0.00	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ceiling	sqft roof	New	0.33	45	\$0.84	15%	50%	\$219.09	38.91	37.75	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$219.09	0.42	0.41	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Ducting	sqft duct	New	0.09	20	\$0.86	15%	25%	\$806.98	8.49	8.25	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	25%	\$806.98	0.64	0.62	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	25%	\$806.98	0.38	0.37	Building Energy Simulation Tool
Warehouse	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.19	20	\$0.81	45%	50%	\$9,999.00	9.01	8.76	Building Energy Simulation Tool
Warehouse	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.22	20	\$0.81	45%	50%	\$9,999.00	-3.71	-3.60	Building Energy Simulation Tool
Warehouse	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$9,999.00	-2.20	-2.14	Building Energy Simulation Tool
Warehouse	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$435.72	-0.64	-0.62	Building Energy Simulation Tool
Warehouse	Heating	Insulation - Wall Cavity	sqft wall	New	0.33	45	\$1.70	15%	50%	\$435.72	7.43	7.21	Building Energy Simulation Tool
Warehouse	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.01	45	\$1.70	15%	50%	\$435.72	4.42	4.29	Building Energy Simulation Tool
Warehouse	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	16.49	18	\$0.59	15%	25%	\$2.04	3.10	3.01	Building Energy Simulation Tool

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Warehouse	Heating	HVAC - Duct Repair and Sealing	tonCool	New	13.22	18	\$0.59	15%	25%	\$2.04	0.86	0.84	Building Energy Simulation Tool
Warehouse	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	0.51	18	\$0.59	15%	25%	\$2.04	0.51	0.50	Building Energy Simulation Tool
Warehouse	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.69	30	\$37.07	66%	66%	\$153.70	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse	Heating	Windows - High Efficiency Glazing	sqft window	New	18.32	30	\$37.07	66%	66%	\$153.70	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse	Ventilation	Windows - High Efficiency Glazing	sqft window	New	0.41	30	\$37.07	66%	66%	\$153.70	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	0.00	10	\$914.46	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	Chiller - Variable Speed Fans	HP fan	New	0.00	15	\$263.92	15%	75%	\$0.00	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$248.07	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	0.00	10	\$1,796.53	15%	75%	\$0.00	0.00	0.00	AEG-BEST
Warehouse	Cooling	HVAC - Economizer	HP cool	New	92.12	5	\$267.96	18%	75%	\$655.52	18.23	17.12	AEG-BEST
Warehouse	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.19	15	\$0.05	10%	15%	\$31.10	5.41	5.13	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	5.61	14	\$5.25	6%	75%	\$109.83	45.51	42.96	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.03	18	\$0.26	15%	20%	\$783.95	8.52	8.26	RES_HRV-Cooling-7PLN-v1-2
Warehouse	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	286.35	15	\$189.00	19%	25%	\$74.76	2.82	2.66	VENT_PMSM-Ventilation-AEG-2016-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	103.19	15	\$1,273.23	19%	50%	\$1,397.68	5.60	5.29	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.02	15	\$0.02	19%	50%	\$84.43	19.68	18.60	AEG-BEST
Warehouse	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	9%	25%	\$9,999.00	0.99	0.93	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	1.10	15	\$0.76	3%	8%	\$73.66	11.63	10.99	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.07	15	\$0.76	3%	8%	\$73.66	12.08	11.42	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,044.56	15	\$7,501.21	15%	75%	\$74.36	61.32	58.18	HVLS-Cooling-AEG-1
Warehouse	Heating	Destratification Fans (HVLS)	Strat Fan	New	9,401.22	15	\$7,501.21	15%	75%	\$74.36	97.68	92.31	HVLS-Heating-AEG-1
Warehouse	Cooling	RTU - Maintenance	tonCool	New	5.62	3	\$33.20	15%	45%	\$2,014.25	0.38	0.36	RTU_MNT-Cooling-PGE-R2-1
Warehouse	Cooling	RTU - Advanced Controls	tonCool	New	141.47	15	\$410.87	15%	45%	\$332.77	64.24	61.81	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse	Cooling	RTU - Evaporative Precooler	tonCool	New	134.48	15	\$698.92	15%	75%	\$595.49	143.35	139.07	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse	Cooling	Ductless Mini Split Heat Pump	tonCool	New	294.85	20	\$1,958.49	15%	25%	\$235.24	2.36	2.24	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Heating	Ductless Mini Split Heat Pump	tonCool	New	535.12	20	\$1,958.49	15%	25%	\$235.24	15.59	14.81	DHP-Cooling/Heating-7PLN-v2-1
Warehouse	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.26	5	\$0.75	30%	40%	\$186.83	7.89	7.53	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.62	5	\$0.75	30%	40%	\$186.83	6.49	6.17	STAT_WIFI-AII-7PLN-v2-1
Warehouse	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.02	5	\$0.75	30%	40%	\$186.83	3.86	3.67	STAT_WIFI-AII-7PLN-v2-1

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Warehouse	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	62.52	10	\$8.63	25%	65%	\$19.22	3.26	3.06	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	68.69	10	\$17.56	25%	65%	(\$226.62)	1.79	1.68	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	17.02	10	\$16.82	25%	65%	(\$307.43)	0.52	0.49	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	15%	20%	\$8.34	3.98	3.84	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Warehouse	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	240.48	15	\$15.38	1%	75%	\$7.25	14.21	13.42	AEG-BEST
Warehouse	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	256.22	4	\$75.87	25%	40%	(\$219.97)	2.89	2.69	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	1.29	1.20	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,062.15	20.21	19.12	AEG-BEST
Warehouse	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.26	15	\$0.36	11%	23%	\$157.29	435.09	421.99	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.37	15	\$0.60	11%	23%	\$185.38	609.13	590.79	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	555.76	15	\$56.14	1%	3%	\$11.69	4.54	4.34	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.52	15	\$65.99	1%	3%	\$142.62	0.26	0.25	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	427.24	11	\$26.48	15%	30%	\$8.35	16.60	15.80	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Warehouse	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	43.75	16	\$1,864.95	5%	15%	\$4,704.79	13.64	13.05	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	1.14	9	\$0.65	15%	25%	\$85.41	43.00	41.05	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	97.00	8	\$56.85	15%	25%	\$95.41	21.11	20.13	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	121.28	7	\$3,486.31	15%	30%	\$5,135.99	35.83	34.12	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	122.23	12	\$50.74	0%	0%	\$52.91	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	31.46	4	\$24.51	0%	0%	\$226.68	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	156.37	15	\$347.21	0%	0%	\$255.18	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	145.44	2	\$10.74	0%	0%	\$54.22	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	New	3.69	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	64.76	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	491.14	15	\$305.13	0%	0%	\$157.02	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	1,966.89	15	\$539.09	0%	0%	\$31.50	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	4,132.48	10	\$449.00	0%	0%	\$15.35	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18

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Warehouse	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	276.23	16	\$153.90	0%	0%	\$62.39	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	99.34	15	\$135.00	0%	0%	\$157.00	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	1,373.92	16	\$105.92	0%	0%	\$11.11	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	1,057.66	10	\$521.11	0%	0%	\$90.00	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	16.66	8	\$647.70	0%	0%	\$9,629.67	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	837.24	12	\$5,648.09	0%	0%	\$872.44	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	54.77	8	\$15.90	0%	0%	\$46.73	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	5.64	8	\$3.87	0%	0%	\$110.34	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	19.70	5	\$49.37	0%	0%	\$558.46	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,577.34	5	\$288.64	25%	75%	\$40.77	2.98	2.78	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	402.38	18	\$8,815.42	25%	50%	\$2,281.04	20.24	19.62	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse	Cooling	Lodging - Guest Room Controls	LodgUnit	New	144.12	15	\$335.00	0%	0%	\$95.21	0.00	0.00	AEG - BEST
Warehouse	Heating	Lodging - Guest Room Controls	LodgUnit	New	254.44	15	\$335.00	0%	0%	\$95.21	0.00	0.00	AEG - BEST

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Warehouse	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	7.89	4	\$37.32	10%	50%	\$1,132.56	9.24	7.32	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$1.05	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$4.85	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	976.83	18	\$4,231.40	0%	0%	\$451.02	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.66	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	64.01	7	\$423.28	0%	0%	(\$1,374.46)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$1,374.46)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Warehouse	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$1,374.46)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	10,057.59	15	\$1,114.41	0%	0%	\$110.05	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$110.05	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	4,552.27	6	\$37.07	1%	3%	\$1.59	4.94	4.74	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.13	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse	Cooling	Advanced New Construction Designs	sqft	New	0.52	25	\$4.24	10%	15%	\$164.88	19.75	19.22	ADVNC-AII-RSRCH-1
Warehouse	Heating	Advanced New Construction Designs	sqft	New	1.24	25	\$4.24	10%	15%	\$164.88	16.24	15.79	ADVNC-AII-RSRCH-1
Warehouse	Ventilation	Advanced New Construction Designs	sqft	New	0.05	25	\$4.24	10%	15%	\$164.88	9.66	9.39	ADVNC-AII-RSRCH-1
Warehouse	Water Heating	Advanced New Construction Designs	sqft	New	0.06	25	\$4.24	10%	15%	\$164.88	6.24	6.07	ADVNC-AII-RSRCH-1
Warehouse	Interior Lighting	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	15%	\$164.88	411.75	402.33	ADVNC-AII-RSRCH-1
Warehouse	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.24	10%	15%	\$164.88	71.70	70.24	ADVNC-AII-RSRCH-1
Warehouse	Cooling	Strategic Energy Management	sqft	New	0.08	3	\$0.01	3%	11%	\$5.61	1.14	1.07	COM_SEM-HVAC-AEG-1
Warehouse	Heating	Strategic Energy Management	sqft	New	0.19	3	\$0.01	3%	11%	\$5.61	0.94	0.87	COM_SEM-HVAC-AEG-1
Warehouse	Ventilation	Strategic Energy Management	sqft	New	0.01	3	\$0.01	3%	11%	\$5.61	0.56	0.52	COM_SEM-HVAC-AEG-1
Warehouse	Water Heating	Strategic Energy Management	sqft	New	0.01	3	\$0.01	3%	11%	\$5.61	0.36	0.34	COM_SEM-Water Heating-AEG-1

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Warehouse	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.01	3%	11%	\$5.61	5.97	5.65	COM_SEM-Lighting-AEG-1
Warehouse	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.01	3%	11%	\$5.61	1.39	1.31	COM_SEM-Lighting-AEG-1
Warehouse	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$0.01	3%	11%	\$5.61	0.29	0.27	COM_SEM-Refrigeration-AEG-1
Warehouse	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.01	3%	11%	\$5.61	0.94	0.74	COM_SEM-Office Equipment-AEG-1
Warehouse	Cooling	Commissioning	sqft	New	0.11	3	\$0.16	11%	73%	\$105.79	78.60	75.76	COM_CX-HVAC-AEG-1
Warehouse	Heating	Commissioning	sqft	New	0.27	3	\$0.16	11%	73%	\$105.79	64.64	62.16	COM_CX-HVAC-AEG-1
Warehouse	Ventilation	Commissioning	sqft	New	0.01	3	\$0.16	11%	73%	\$105.79	38.44	36.96	COM_CX-HVAC-AEG-1
Warehouse	Water Heating	Commissioning	sqft	New	0.00	3	\$0.16	11%	73%	\$105.79	8.28	7.97	COM_CX-Water Heating-AEG-1
Warehouse	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.16	11%	73%	\$105.79	1,365.69	1,323.63	COM_CX-Lighting-AEG-1
Warehouse	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.16	11%	73%	\$105.79	237.82	231.11	COM_CX-Lighting-AEG-1
Warehouse	Refrigeration	Commissioning	sqft	New	0.01	3	\$0.16	11%	73%	\$105.79	14.49	13.98	COM_CX-Refrigeration-AEG-1
Warehouse	Cooling	Retrocommissioning	sqft	New	0.11	3	\$0.05	0%	0%	\$33.58	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Heating	Retrocommissioning	sqft	New	0.27	3	\$0.05	0%	0%	\$33.58	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Ventilation	Retrocommissioning	sqft	New	0.01	3	\$0.05	0%	0%	\$33.58	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse	Water Heating	Retrocommissioning	sqft	New	0.00	3	\$0.05	0%	0%	\$33.58	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.05	0%	0%	\$33.58	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.05	0%	0%	\$33.58	0.00	0.00	COM_RCX-Lighting-AEG-1

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Warehouse	Refrigeration	Retrocommissioning	sqft	New	0.01	3	\$0.05	0%	0%	\$33.58	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$189.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.03	10	\$1.12	0%	0%	\$5,649.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.01	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse	Miscellaneous	LED Signage	perBldg	New	142.16	16	\$75.53	20%	75%	\$58.34	2.29	2.16	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	7,627.90	25	\$11,631.17	0%	0%	\$148.57	0.00	0.00	WHP Analysis
Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	Existing	0.18	45	\$0.84	15%	35%	\$122.85	2.56	2.49	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	Existing	0.37	45	\$0.84	15%	35%	\$122.85	0.71	0.68	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.05	45	\$0.84	15%	35%	\$122.85	1.90	1.83	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	Existing	0.07	20	\$0.86	15%	50%	\$1,006.93	1.75	1.70	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	Existing	0.02	20	\$0.86	15%	50%	\$1,006.93	0.05	0.05	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$1,006.93	0.14	0.14	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.24	20	\$0.81	45%	50%	\$9,999.00	0.85	0.83	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.25	20	\$0.81	45%	50%	\$9,999.00	-0.12	-0.11	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.81	45%	50%	\$9,999.00	-0.32	-0.31	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.01	45	\$1.70	15%	35%	\$49.72	0.04	0.04	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	Existing	2.61	45	\$1.70	15%	35%	\$49.72	0.94	0.91	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.36	45	\$1.70	15%	35%	\$49.72	2.53	2.44	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	11.21	18	\$0.59	15%	50%	\$2.00	0.56	0.55	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	17.42	18	\$0.59	15%	50%	\$2.00	0.12	0.11	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	2.41	18	\$0.59	15%	50%	\$2.00	0.31	0.30	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	4.70	30	\$37.07	48%	48%	\$129.84	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	Existing	20.46	30	\$37.07	48%	48%	\$129.84	0.00	0.00	WND_FLM-Heating-7PLN-v3-2

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Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.63	30	\$37.07	48%	48%	\$129.84	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	6,066.70	10	\$914.46	15%	75%	\$21.23	1.31	1.25	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	242.35	15	\$248.07	15%	75%	\$117.27	7.30	6.93	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	882.52	15	\$263.92	15%	75%	\$34.26	2.66	2.52	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	45.03	15	\$248.07	15%	75%	\$623.96	0.14	0.13	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	28,081.62	10	\$1,796.53	15%	75%	\$26.50	0.62	0.58	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	Existing	120.49	5	\$267.96	18%	75%	\$505.07	7.42	7.11	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.24	15	\$0.05	5%	15%	\$24.77	1.85	1.78	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	6.26	14	\$5.25	3%	75%	\$99.12	2.81	2.65	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.26	15%	20%	\$197.12	1.27	1.23	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	1,007.42	15	\$189.00	13%	25%	\$21.54	1.56	1.48	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	363.03	15	\$1,273.23	13%	50%	\$402.66	1.76	1.68	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.08	15	\$0.02	13%	50%	\$24.33	6.19	5.89	FAN_VSD-Ventilation-MIDATL-v3.0-13
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	9%	25%	\$3,234.41	0.26	0.25	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.10	15	\$0.76	3%	8%	\$61.92	0.60	0.57	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.30	15	\$0.76	3%	8%	\$61.92	3.17	3.01	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	2,605.24	15	\$7,501.21	15%	15%	\$65.56	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	10,495.49	15	\$7,501.21	15%	15%	\$65.56	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	0.20	0.20	RTU_MNT-Cooling-PGE-R2-1
Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	Existing	191.48	15	\$410.87	15%	45%	\$249.34	4.11	4.00	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	Existing	182.02	15	\$698.92	15%	75%	\$446.20	7.54	7.37	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	327.39	20	\$1,958.49	15%	25%	\$223.49	0.14	0.14	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	564.73	20	\$1,958.49	15%	25%	\$223.49	0.60	0.56	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.33	5	\$0.75	30%	40%	\$152.44	2.37	2.31	STAT_WIFI-All-7PLN-v2-1

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Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.69	5	\$0.75	30%	40%	\$152.44	0.66	0.63	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.10	5	\$0.75	30%	40%	\$152.44	1.76	1.70	STAT_WIFI-AII-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	113.88	10	\$8.63	25%	65%	\$10.86	0.57	0.55	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	125.13	10	\$17.56	25%	65%	(\$128.06)	0.31	0.30	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	31.01	10	\$16.82	25%	65%	(\$173.73)	0.08	0.07	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	20%	\$8.17	0.35	0.34	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	438.05	15	\$15.38	16%	75%	\$4.09	1.34	1.29	AEG-BEST
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	466.72	4	\$75.87	25%	40%	(\$124.31)	0.87	0.83	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	0.73	0.70	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.12	20	\$258.33	1%	30%	\$2,019.97	2.32	2.23	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.29	15	\$0.36	13%	38%	\$150.61	18.35	18.21	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.40	15	\$0.60	13%	38%	\$177.51	25.69	25.49	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	607.65	15	\$56.14	1%	3%	\$11.20	0.36	0.37	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.39	15	\$65.99	1%	3%	\$149.81	0.02	0.02	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	30%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	463.52	11	\$26.48	15%	30%	\$8.08	1.31	1.29	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	47.46	16	\$1,864.95	5%	15%	\$4,555.27	0.89	0.88	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.42	9	\$0.65	15%	25%	\$41.95	3.87	3.85	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	104.99	8	\$56.85	15%	25%	\$91.99	2.06	2.05	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	131.29	7	\$3,486.31	15%	30%	\$4,951.96	3.86	3.84	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	940.60	12	\$50.74	0%	0%	\$6.88	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	3,786.27	4	\$24.51	0%	0%	\$1.72	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	3,977.50	15	\$347.21	0%	0%	\$9.89	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	2,160.18	2	\$10.74	0%	0%	\$2.37	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	93.85	15	\$508.61	0%	0%	\$971.08	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	1,647.29	15	\$5,552.98	0%	0%	\$660.26	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	12,492.72	15	\$305.13	5%	25%	\$6.08	59.48	55.76	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	50,029.97	15	\$539.09	0%	0%	\$1.22	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	105,113.89	10	\$449.00	0%	0%	\$0.59	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	11,172.89	16	\$153.90	5%	25%	\$1.51	15.02	14.08	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	4,017.94	15	\$135.00	0%	0%	\$3.81	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	113,997.29	16	\$105.92	0%	0%	\$0.10	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	87,756.29	10	\$521.11	0%	0%	\$0.83	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	20,783.95	8	\$18,135.52	0%	0%	\$140.43	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	21,295.96	12	\$605.15	0%	0%	\$3.62	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	418.51	8	\$15.90	0%	0%	\$6.12	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6

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Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	43.12	8	\$3.87	0%	0%	\$14.44	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	151.57	5	\$49.37	0%	0%	\$72.57	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,096.11	5	\$288.64	25%	75%	\$58.67	18.04	16.91	VEND_CTRL-Miscellaneous-SCE-17R0-50
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,621.98	18	\$8,815.42	25%	50%	\$573.56	3.02	2.91	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	158.90	15	\$335.00	0%	0%	\$91.41	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	265.19	15	\$335.00	0%	0%	\$91.41	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	5.97	4	\$37.32	10%	50%	\$1,464.20	1.24	0.97	SMARTSTRIP-Electronics-RTF-v3.2-1
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.02	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$1.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.16	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$1.16	0.00	0.00	com-datacenters-7p_v5p.xlsx

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Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$9.73	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	3,937.53	18	\$4,231.40	0%	0%	\$113.41	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.75	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	116.60	7	\$423.28	0%	0%	(\$776.73)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$776.73)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$776.73)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	18,320.78	15	\$1,114.41	0%	0%	\$62.19	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$62.19	0.00	0.00	CW_ALTDRYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	3,691.18	6	\$37.07	1%	3%	\$1.96	0.31	0.30	ESTAR_WC-Miscellaneous-7PLN-v6-1

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Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.01	20	\$0.12	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	Existing	0.44	25	\$4.24	0%	0%	\$180.53	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	Existing	1.01	25	\$4.24	0%	0%	\$180.53	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	Existing	0.15	25	\$4.24	0%	0%	\$180.53	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	Existing	0.10	25	\$4.24	0%	0%	\$180.53	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.53	25	\$4.24	0%	0%	\$180.53	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.12	25	\$4.24	0%	0%	\$180.53	0.00	0.00	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	Existing	0.10	3	\$0.06	3%	11%	\$16.02	0.64	0.62	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	Existing	0.21	3	\$0.06	3%	11%	\$16.02	0.18	0.17	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.06	3%	11%	\$16.02	0.48	0.45	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	Existing	0.02	3	\$0.06	3%	11%	\$16.02	0.14	0.13	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	Existing	0.09	3	\$0.06	3%	11%	\$16.02	1.32	1.32	COM_SEM-Lighting-AEG-1

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Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.02	3	\$0.06	3%	11%	\$16.02	0.31	0.30	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	Existing	0.69	3	\$0.06	3%	11%	\$16.02	11.23	10.53	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	Existing	0.01	3	\$0.06	3%	11%	\$16.02	0.16	0.13	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	Existing	0.14	3	\$0.23	0%	0%	\$36.22	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	Existing	0.30	3	\$0.23	0%	0%	\$36.22	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.23	0%	0%	\$36.22	0.00	0.00	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	Existing	0.01	3	\$0.23	0%	0%	\$36.22	0.00	0.00	COM_CX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	Existing	0.10	3	\$0.23	0%	0%	\$36.22	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	Existing	0.02	3	\$0.23	0%	0%	\$36.22	0.00	0.00	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	Existing	1.58	3	\$0.23	0%	0%	\$36.22	0.00	0.00	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	Existing	0.14	3	\$0.07	11%	73%	\$11.50	6.88	6.63	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	Existing	0.30	3	\$0.07	11%	73%	\$11.50	1.90	1.80	COM_RCX-HVAC-AEG-1

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Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.07	11%	73%	\$11.50	5.11	4.86	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$0.07	11%	73%	\$11.50	0.50	0.48	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	Existing	0.10	3	\$0.07	11%	73%	\$11.50	11.77	11.80	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	Existing	0.02	3	\$0.07	11%	73%	\$11.50	2.73	2.72	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	Existing	1.58	3	\$0.07	11%	73%	\$11.50	200.83	188.27	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.07	10	\$0.09	0%	0%	\$181.45	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	4.88	10	\$1.12	0%	0%	\$32.03	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	1.27	3	\$0.24	0%	0%	\$63.33	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	2.37	10	\$3.24	0%	0%	\$189.91	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.47	10	\$0.70	0%	0%	\$206.08	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	Existing	199.17	16	\$75.53	20%	75%	\$41.64	0.24	0.23	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	5,171.30	25	\$8,436.35	0%	0%	\$163.54	0.00	0.00	WHP Analysis

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Warehouse, Controlled Atm.	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$268.35	0.00	0.00	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ceiling	sqft roof	New	0.27	45	\$0.84	15%	50%	\$268.35	0.28	0.27	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$268.35	0.01	0.01	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Ducting	sqft duct	New	0.07	20	\$0.86	15%	50%	\$945.84	0.59	0.58	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	50%	\$945.84	0.02	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Ducting	sqft duct	New	0.00	20	\$0.86	15%	50%	\$945.84	0.05	0.04	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.16	20	\$0.81	45%	50%	\$9,999.00	0.18	0.17	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.18	20	\$0.81	45%	50%	\$9,999.00	-0.03	-0.03	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.03	20	\$0.81	45%	50%	\$9,999.00	-0.08	-0.07	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.01	45	\$1.70	15%	50%	\$484.00	-0.01	-0.01	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	Insulation - Wall Cavity	sqft wall	New	0.27	45	\$1.70	15%	50%	\$484.00	0.05	0.05	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$484.00	0.15	0.15	Building Energy Simulation Tool

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Warehouse, Controlled Atm.	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	13.84	18	\$0.59	15%	50%	\$2.34	0.22	0.21	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Heating	HVAC - Duct Repair and Sealing	tonCool	New	10.77	18	\$0.59	15%	50%	\$2.34	0.02	0.02	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.57	18	\$0.59	15%	50%	\$2.34	0.06	0.06	Building Energy Simulation Tool
Warehouse, Controlled Atm.	Cooling	Windows - High Efficiency Glazing	sqft window	New	3.10	30	\$37.07	66%	66%	\$178.63	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Warehouse, Controlled Atm.	Heating	Windows - High Efficiency Glazing	sqft window	New	14.93	30	\$37.07	66%	66%	\$178.63	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Warehouse, Controlled Atm.	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.25	30	\$37.07	66%	66%	\$178.63	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Warehouse, Controlled Atm.	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	4,017.71	10	\$914.46	15%	75%	\$31.69	0.12	0.11	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	160.50	15	\$248.07	15%	75%	\$175.08	0.85	0.80	AEG-BEST
Warehouse, Controlled Atm.	Cooling	Chiller - Variable Speed Fans	HP fan	New	584.46	15	\$263.92	15%	75%	\$51.15	0.31	0.29	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	21.10	15	\$248.07	15%	75%	\$1,331.79	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Warehouse, Controlled Atm.	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	18,185.28	10	\$1,796.53	15%	75%	\$40.92	0.06	0.05	AEG-BEST
Warehouse, Controlled Atm.	Cooling	HVAC - Economizer	HP cool	New	78.73	5	\$267.96	18%	75%	\$763.06	0.41	0.38	AEG-BEST

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Warehouse, Controlled Atm.	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.16	15	\$0.05	10%	15%	\$36.90	0.11	0.10	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Warehouse, Controlled Atm.	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	4.57	14	\$5.25	6%	75%	\$134.79	0.33	0.31	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.10	18	\$0.26	15%	20%	\$256.23	0.30	0.29	RES_HRV-Cooling-7PLN-v1-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	876.12	15	\$189.00	19%	25%	\$24.44	0.10	0.09	VENT_PMSM-Ventilation-AEG-2016-2
Warehouse, Controlled Atm.	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	315.71	15	\$1,273.23	19%	50%	\$456.82	0.20	0.18	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Warehouse, Controlled Atm.	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.06	15	\$0.02	19%	50%	\$27.60	0.69	0.65	AEG-BEST
Warehouse, Controlled Atm.	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	9%	25%	\$4,204.25	0.03	0.03	VENT_DCV-Ventilation-7PLN-v5-5
Warehouse, Controlled Atm.	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.89	15	\$0.76	3%	8%	\$76.96	0.08	0.08	HVAC_DOAS-Heating-7PLN-v5-25
Warehouse, Controlled Atm.	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.23	15	\$0.76	3%	8%	\$76.96	0.42	0.40	HVAC_DOAS-Heating-7PLN-v5-1
Warehouse, Controlled Atm.	Cooling	Destratification Fans (HVLS)	Strat Fan	New	1,717.08	15	\$7,501.21	15%	15%	\$90.70	0.00	0.00	HVLS-Cooling-AEG-1
Warehouse, Controlled Atm.	Heating	Destratification Fans (HVLS)	Strat Fan	New	7,660.49	15	\$7,501.21	15%	15%	\$90.70	0.00	0.00	HVLS-Heating-AEG-1
Warehouse, Controlled Atm.	Cooling	RTU - Maintenance	tonCool	New	5.62	3	\$33.20	15%	45%	\$2,014.25	0.01	0.00	RTU_MNT-Cooling-PGE-R2-1

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Warehouse, Controlled Atm.	Cooling	RTU - Advanced Controls	tonCool	New	122.89	15	\$410.87	15%	45%	\$383.09	0.78	0.75	RTU_CTRL-Cooling-RTF-1.1-1
Warehouse, Controlled Atm.	Cooling	RTU - Evaporative Precooler	tonCool	New	116.81	15	\$698.92	15%	75%	\$685.56	1.74	1.69	RTU_PREC-Cooling-XCELCO-2017-18-1
Warehouse, Controlled Atm.	Cooling	Ductless Mini Split Heat Pump	tonCool	New	256.11	20	\$1,958.49	15%	25%	\$275.35	0.03	0.02	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Ductless Mini Split Heat Pump	tonCool	New	452.94	20	\$1,958.49	15%	25%	\$275.35	0.10	0.10	DHP-Cooling/Heating-7PLN-v2-1
Warehouse, Controlled Atm.	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.22	5	\$0.75	30%	40%	\$211.68	0.16	0.15	STAT_WIFI-All-7PLN-v2-1
Warehouse, Controlled Atm.	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.50	5	\$0.75	30%	40%	\$211.68	0.05	0.04	STAT_WIFI-All-7PLN-v2-1
Warehouse, Controlled Atm.	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.07	5	\$0.75	30%	40%	\$211.68	0.13	0.13	STAT_WIFI-All-7PLN-v2-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	108.36	10	\$8.63	25%	65%	\$11.09	0.07	0.06	DHW_AER-Water Heating-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	119.07	10	\$17.56	25%	65%	(\$130.74)	0.04	0.03	DHW_SHW-Water Heating-RTF-v3.1-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	29.50	10	\$16.82	25%	65%	(\$177.36)	0.01	0.01	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - High Efficiency Circulation Pump	WHUnits	New	610.47	11	\$37.97	15%	20%	\$8.34	0.08	0.08	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	416.83	15	\$15.38	1%	75%	\$4.18	0.29	0.27	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	444.12	4	\$75.87	25%	40%	(\$126.90)	0.06	0.05	DHW_SPR-Water Heating-RTF-v2.4-1
Warehouse, Controlled Atm.	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	0.03	0.02	DHW_STBK-Water Heating-ILTRM-v4.0-4
Warehouse, Controlled Atm.	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,062.15	0.41	0.38	AEG-BEST
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.26	15	\$0.36	13%	38%	\$157.29	11.01	10.68	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.37	15	\$0.60	13%	38%	\$185.38	15.42	14.95	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	555.76	15	\$56.14	1%	3%	\$11.69	0.05	0.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.52	15	\$65.99	1%	3%	\$142.62	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	33%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	427.24	11	\$26.48	15%	30%	\$8.35	0.19	0.18	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	43.75	16	\$1,864.95	5%	15%	\$4,704.79	0.16	0.15	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.24	9	\$0.65	15%	25%	\$43.51	0.49	0.47	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	97.00	8	\$56.85	15%	25%	\$95.41	0.24	0.23	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Warehouse, Controlled Atm.	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	121.28	7	\$3,486.31	15%	30%	\$5,135.99	0.41	0.39	CLTG_EXT_PV-Exterior Lighting-AEG-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	936.42	12	\$50.74	0%	0%	\$6.91	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	3,796.26	4	\$24.51	0%	0%	\$1.71	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	3,988.00	15	\$347.21	0%	0%	\$9.86	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	2,150.58	2	\$10.74	0%	0%	\$2.38	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	94.10	15	\$508.61	0%	0%	\$968.52	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	1,651.64	15	\$5,552.98	0%	0%	\$658.52	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	12,525.68	15	\$305.13	5%	25%	\$6.07	10.23	9.67	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	50,161.98	15	\$539.09	0%	0%	\$1.22	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	105,391.24	10	\$449.00	0%	0%	\$0.59	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	11,202.37	16	\$153.90	5%	25%	\$1.51	2.65	2.51	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	4,028.54	15	\$135.00	0%	0%	\$3.80	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1

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Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	114,298.08	16	\$105.92	0%	0%	\$0.10	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	87,987.84	10	\$521.11	0%	0%	\$0.82	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	738.99	8	\$215.90	0%	0%	\$47.02	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Warehouse, Controlled Atm.	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	21,352.15	12	\$5,648.09	0%	0%	\$33.72	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	419.62	8	\$15.90	0%	0%	\$6.10	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Warehouse, Controlled Atm.	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	43.24	8	\$3.87	0%	0%	\$14.40	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Warehouse, Controlled Atm.	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	150.89	5	\$49.37	0%	0%	\$72.90	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Warehouse, Controlled Atm.	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,091.24	5	\$288.64	25%	75%	\$58.93	1.47	1.37	VEND_CTRL-Miscellaneous-SCE-17R0-41
Warehouse, Controlled Atm.	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,231.13	18	\$8,815.42	25%	50%	\$745.54	0.71	0.68	COOK_EXHD-Food Preparation-7PLN-v3-10
Warehouse, Controlled Atm.	Cooling	Lodging - Guest Room Controls	LodgUnit	New	125.19	15	\$335.00	0%	0%	\$111.40	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Heating	Lodging - Guest Room Controls	LodgUnit	New	215.44	15	\$335.00	0%	0%	\$111.40	0.00	0.00	AEG - BEST
Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	5.79	4	\$37.32	10%	50%	\$1,542.99	0.08	0.06	SMARTSTRIP-Electronics-RTF-v3.2-1

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Warehouse, Controlled Atm.	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	10%	50%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Warehouse, Controlled Atm.	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Cooling	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.09	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.09	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$1.09	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$4.50	0.00	0.00	com-datacenters-7p_v5p.xlsx
Warehouse, Controlled Atm.	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	2,988.71	18	\$4,231.40	0%	0%	\$147.41	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Warehouse, Controlled Atm.	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Warehouse, Controlled Atm.	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Warehouse, Controlled Atm.	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.05	0%	0%	\$4,093.44	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	110.96	7	\$423.28	0%	0%	(\$792.95)	0.00	0.00	CW-Water Heating-RTF-v5.1-12

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Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$792.95)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$792.95)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Warehouse, Controlled Atm.	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	17,433.44	15	\$1,114.41	0%	0%	\$63.49	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$63.49	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Warehouse, Controlled Atm.	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	3,674.78	6	\$37.07	1%	3%	\$1.97	0.05	0.04	ESTAR_WC-Miscellaneous-7PLN-v6-1
Warehouse, Controlled Atm.	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.01	20	\$0.11	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Warehouse, Controlled Atm.	Cooling	Advanced New Construction Designs	sqft	New	0.44	25	\$4.24	10%	15%	\$176.74	0.39	0.38	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Heating	Advanced New Construction Designs	sqft	New	1.01	25	\$4.24	10%	15%	\$176.74	0.12	0.11	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Ventilation	Advanced New Construction Designs	sqft	New	0.15	25	\$4.24	10%	15%	\$176.74	0.34	0.33	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Water Heating	Advanced New Construction Designs	sqft	New	0.10	25	\$4.24	10%	15%	\$176.74	0.13	0.12	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Interior Lighting	Advanced New Construction Designs	sqft	New	0.53	25	\$4.24	10%	15%	\$176.74	4.70	4.59	ADVNC-AII-RSRCH-1
Warehouse, Controlled Atm.	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.12	25	\$4.24	10%	15%	\$176.74	0.82	0.80	ADVNC-AII-RSRCH-1

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Warehouse, Controlled Atm.	Cooling	Strategic Energy Management	sqft	New	0.07	3	\$0.05	3%	11%	\$14.49	0.02	0.02	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Strategic Energy Management	sqft	New	0.16	3	\$0.05	3%	11%	\$14.49	0.01	0.01	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Strategic Energy Management	sqft	New	0.02	3	\$0.05	3%	11%	\$14.49	0.02	0.02	COM_SEM-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Strategic Energy Management	sqft	New	0.02	3	\$0.05	3%	11%	\$14.49	0.01	0.01	COM_SEM-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Strategic Energy Management	sqft	New	0.08	3	\$0.05	3%	11%	\$14.49	0.07	0.06	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Strategic Energy Management	sqft	New	0.02	3	\$0.05	3%	11%	\$14.49	0.02	0.01	COM_SEM-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Strategic Energy Management	sqft	New	0.69	3	\$0.05	3%	11%	\$14.49	0.59	0.55	COM_SEM-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Office Equipment	Strategic Energy Management	sqft	New	0.01	3	\$0.05	3%	11%	\$14.49	0.01	0.01	COM_SEM-Office Equipment-AEG-1
Warehouse, Controlled Atm.	Cooling	Commissioning	sqft	New	0.09	3	\$0.13	11%	73%	\$22.18	1.57	1.51	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Commissioning	sqft	New	0.22	3	\$0.13	11%	73%	\$22.18	0.47	0.45	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Commissioning	sqft	New	0.03	3	\$0.13	11%	73%	\$22.18	1.34	1.29	COM_CX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Commissioning	sqft	New	0.01	3	\$0.13	11%	73%	\$22.18	0.17	0.16	COM_CX-Water Heating-AEG-1

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Warehouse, Controlled Atm.	Interior Lighting	Commissioning	sqft	New	0.09	3	\$0.13	11%	73%	\$22.18	15.57	15.09	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Commissioning	sqft	New	0.02	3	\$0.13	11%	73%	\$22.18	2.71	2.64	COM_CX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Commissioning	sqft	New	1.59	3	\$0.13	11%	73%	\$22.18	200.56	192.87	COM_CX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Cooling	Retrocommissioning	sqft	New	0.09	3	\$0.04	0%	0%	\$7.04	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Heating	Retrocommissioning	sqft	New	0.22	3	\$0.04	0%	0%	\$7.04	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Ventilation	Retrocommissioning	sqft	New	0.03	3	\$0.04	0%	0%	\$7.04	0.00	0.00	COM_RCX-HVAC-AEG-1
Warehouse, Controlled Atm.	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$0.04	0%	0%	\$7.04	0.00	0.00	COM_RCX-Water Heating-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Retrocommissioning	sqft	New	0.09	3	\$0.04	0%	0%	\$7.04	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Exterior Lighting	Retrocommissioning	sqft	New	0.02	3	\$0.04	0%	0%	\$7.04	0.00	0.00	COM_RCX-Lighting-AEG-1
Warehouse, Controlled Atm.	Refrigeration	Retrocommissioning	sqft	New	1.59	3	\$0.04	0%	0%	\$7.04	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Warehouse, Controlled Atm.	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.07	10	\$0.09	0%	0%	\$189.35	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	4.90	10	\$1.12	0%	0%	\$31.94	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	1.27	3	\$0.24	0%	0%	\$63.16	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	2.38	10	\$3.24	0%	0%	\$189.41	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.48	10	\$0.70	0%	0%	\$205.54	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Warehouse, Controlled Atm.	Miscellaneous	LED Signage	perBldg	New	198.28	16	\$75.53	20%	75%	\$41.83	0.04	0.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Warehouse, Controlled Atm.	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	5,484.32	25	\$8,362.60	0%	0%	\$148.57	0.00	0.00	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	Existing	2.75	45	\$0.84	15%	35%	\$15.87	0.07	0.07	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	Existing	0.21	45	\$0.84	15%	35%	\$15.87	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	Existing	1.88	45	\$0.84	15%	35%	\$15.87	0.05	0.05	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	Existing	1.07	20	\$0.86	15%	35%	\$78.02	0.03	0.03	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ducting	sqft duct	Existing	0.01	20	\$0.86	15%	35%	\$78.02	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	Existing	0.08	20	\$0.86	15%	35%	\$78.02	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	3.67	20	\$0.81	45%	50%	\$36.86	0.02	0.02	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.14	20	\$0.81	45%	50%	\$36.86	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-1.25	20	\$0.81	45%	50%	\$36.86	-0.01	-0.01	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$1.70	15%	35%	\$10.46	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.48	45	\$1.70	15%	35%	\$10.46	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	13.19	45	\$1.70	15%	35%	\$10.46	0.06	0.06	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	34.57	18	\$0.59	15%	50%	\$1.19	0.01	0.01	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	1.98	18	\$0.59	15%	50%	\$1.19	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	17.64	18	\$0.59	15%	50%	\$1.19	0.01	0.01	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	72.43	30	\$37.07	48%	48%	\$25.21	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	Existing	11.61	30	\$37.07	48%	48%	\$25.21	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	59.65	30	\$37.07	48%	48%	\$25.21	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	19,320.51	10	\$914.46	15%	75%	\$6.92	0.02	0.02	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	771.81	15	\$248.07	15%	75%	\$38.23	0.11	0.11	AEG-BEST
Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	2,810.56	15	\$263.92	15%	75%	\$11.17	0.04	0.04	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	88,119.75	10	\$1,796.53	15%	75%	\$9.09	0.03	0.03	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	Existing	384.76	5	\$267.96	18%	75%	\$160.36	0.16	0.16	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	3.67	15	\$0.05	5%	15%	\$1.65	0.05	0.05	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	0.07	14	\$5.25	3%	75%	\$8,792.24	0.01	0.01	RES_HRV-Cooling-7PLN-v1-2

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Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	5.02	18	\$0.26	15%	20%	\$5.67	0.03	0.03	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	36,807.90	15	\$189.00	0%	0%	\$0.62	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	13,263.81	15	\$1,273.23	0%	0%	\$11.58	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	3.08	15	\$0.02	13%	50%	\$0.70	0.15	0.15	FAN_VSD-Ventilation-MIDATL-v3.0-13
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.30	15	\$0.23	9%	25%	\$93.00	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.63	15	\$0.76	3%	8%	\$47.51	0.00	0.00	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	1.27	15	\$0.76	3%	8%	\$47.51	0.01	0.01	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	40,161.04	15	\$7,501.21	15%	15%	\$19.25	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	5,957.74	15	\$7,501.21	15%	15%	\$19.25	0.00	0.00	HVLS-Heating-AEG-1
Data Center	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	Existing	605.46	15	\$410.87	15%	45%	\$78.86	0.11	0.11	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	Existing	575.54	15	\$698.92	15%	75%	\$141.12	0.21	0.20	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	1,035.21	20	\$391.70	15%	25%	\$37.36	0.00	0.00	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	68.46	20	\$391.70	15%	25%	\$37.36	0.00	0.00	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	5.10	5	\$0.75	30%	40%	\$19.69	0.06	0.06	STAT_WIFI-All-7PLN-v2-1

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Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	30%	40%	\$19.69	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	3.48	5	\$0.75	30%	40%	\$19.69	0.04	0.04	STAT_WIFI-AII-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	190.42	10	\$8.63	25%	65%	\$6.50	0.00	0.00	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	209.23	10	\$17.56	25%	65%	(\$76.59)	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	51.85	10	\$16.82	25%	65%	(\$103.90)	0.00	0.00	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	20%	\$8.17	0.00	0.00	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	732.48	15	\$15.38	16%	75%	\$2.45	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	780.42	4	\$75.87	25%	40%	(\$74.34)	0.00	0.00	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-4
Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	Existing	13.12	20	\$258.33	1%	30%	\$2,019.97	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.96	15	\$0.36	3%	23%	\$44.99	0.03	0.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.35	15	\$0.60	3%	23%	\$53.03	0.05	0.05	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	2,150.82	15	\$56.14	1%	3%	\$3.23	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.30	15	\$65.99	1%	3%	\$153.35	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	6,433.17	11	\$26.48	15%	30%	\$0.58	0.01	0.01	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	658.75	16	\$1,864.95	5%	15%	\$328.81	0.01	0.01	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.73	9	\$0.65	15%	25%	\$38.07	0.01	0.01	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	Existing	99.42	8	\$56.85	15%	25%	\$99.45	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	Existing	124.32	7	\$3,486.31	15%	30%	\$5,353.50	0.01	0.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	31.31	12	\$50.74	0%	0%	\$216.05	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	8.39	4	\$24.51	0%	0%	\$900.87	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	32.99	15	\$347.21	0%	0%	\$1,298.98	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	41.46	2	\$10.74	0%	0%	\$191.92	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBtuh	Existing	0.78	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	13.66	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	103.62	15	\$305.13	0%	0%	\$799.32	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1

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Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	414.99	15	\$539.09	0%	0%	\$160.35	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	871.90	10	\$449.00	0%	0%	\$78.14	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	72.49	16	\$153.90	0%	0%	\$260.48	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	26.07	15	\$135.00	0%	0%	\$655.45	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	245.19	16	\$105.92	0%	0%	\$56.63	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	188.75	10	\$521.11	0%	0%	\$458.95	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	132.96	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	176.65	12	\$605.15	0%	0%	\$475.84	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	13.97	8	\$15.90	0%	0%	\$191.96	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.44	8	\$3.87	0%	0%	\$453.28	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	5.06	5	\$49.37	0%	0%	\$2,277.53	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,780.69	5	\$288.64	25%	75%	\$37.98	0.00	0.00	VEND_CTRL-Miscellaneous-SCE-17R0-42

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Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	59,261.58	18	\$8,815.42	25%	50%	\$16.49	0.07	0.07	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	2,512.16	15	\$335.00	0%	0%	\$14.99	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	160.78	15	\$335.00	0%	0%	\$14.99	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	2,487.98	4	\$37.32	10%	50%	\$3.24	0.42	0.30	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	13.74	5	\$1.03	20%	75%	\$16.92	1.34	1.27	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.10	8	\$0.93	10%	35%	\$44.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.06	8	\$0.93	10%	35%	\$44.64	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	3.26	8	\$0.93	10%	35%	\$44.64	0.15	0.14	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	1.10	6	\$0.18	10%	15%	\$32.40	0.01	0.01	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	143,864.20	18	\$4,231.40	0%	0%	\$3.26	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	Existing	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.00	10	\$0.79	0%	0%	\$9,999.00	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	194.98	7	\$423.28	0%	0%	(\$464.51)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$464.51)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.00	7	\$423.28	0%	0%	(\$464.51)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	30,634.88	15	\$1,114.41	0%	0%	\$37.19	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	0.00	15	\$1,114.41	0%	0%	\$37.19	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	243,815.33	6	\$37.07	1%	3%	\$0.03	0.01	0.01	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.85	20	\$8.09	0%	0%	\$981.45	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	Existing	6.66	25	\$4.24	0%	0%	\$29.98	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Heating	Advanced New Construction Designs	sqft	Existing	0.59	25	\$4.24	0%	0%	\$29.98	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	Existing	4.92	25	\$4.24	0%	0%	\$29.98	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	Existing	0.17	25	\$4.24	0%	0%	\$29.98	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	Existing	1.87	25	\$4.24	0%	0%	\$29.98	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.37	25	\$4.24	0%	0%	\$29.98	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	Existing	1.59	3	\$1.63	0%	0%	\$78.39	0.00	0.00	COM_SEM-HVAC-AEG-1

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Data Center	Heating	Strategic Energy Management	sqft	Existing	0.12	3	\$1.63	0%	0%	\$78.39	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	Existing	1.08	3	\$1.63	0%	0%	\$78.39	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	Existing	0.03	3	\$1.63	0%	0%	\$78.39	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	Existing	0.32	3	\$1.63	0%	0%	\$78.39	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.06	3	\$1.63	0%	0%	\$78.39	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	Existing	0.00	3	\$1.63	0%	0%	\$78.39	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	Existing	3.26	3	\$1.63	0%	0%	\$78.39	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	Existing	2.20	3	\$11.89	0%	0%	\$979.34	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	Existing	0.17	3	\$11.89	0%	0%	\$979.34	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	Existing	1.50	3	\$11.89	0%	0%	\$979.34	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	Existing	0.01	3	\$11.89	0%	0%	\$979.34	0.00	0.00	COM_CX-Water Heating-AEG-1
Data Center	Interior Lighting	Commissioning	sqft	Existing	0.37	3	\$11.89	0%	0%	\$979.34	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	Existing	0.07	3	\$11.89	0%	0%	\$979.34	0.00	0.00	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	Existing	0.00	3	\$11.89	0%	0%	\$979.34	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	Existing	2.20	3	\$3.77	2%	65%	\$310.86	0.18	0.18	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	Existing	0.17	3	\$3.77	2%	65%	\$310.86	0.01	0.01	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	Existing	1.50	3	\$3.77	2%	65%	\$310.86	0.12	0.13	COM_RCX-HVAC-AEG-1

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Data Center	Water Heating	Retrocommissioning	sqft	Existing	0.01	3	\$3.77	2%	65%	\$310.86	0.00	0.00	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	Existing	0.37	3	\$3.77	2%	65%	\$310.86	0.03	0.03	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	Existing	0.07	3	\$3.77	2%	65%	\$310.86	0.01	0.01	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	Existing	0.00	3	\$3.77	2%	65%	\$310.86	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.26	10	\$0.09	0%	0%	\$52.39	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.00	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Miscellaneous	LED Signage	perBldg	Existing	108.14	16	\$75.53	20%	75%	\$76.69	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	332,931.41	25	\$543,136.96	0%	75%	\$163.54	0.21	0.20	WHP Analysis
Data Center	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$402.30	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Ceiling	sqft roof	New	0.16	45	\$0.84	15%	50%	\$402.30	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ceiling	sqft roof	New	0.02	45	\$0.84	15%	50%	\$402.30	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Ducting	sqft duct	New	1.12	20	\$0.86	15%	50%	\$72.15	0.02	0.02	Building Energy Simulation Tool

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Data Center	Heating	Insulation - Ducting	sqft duct	New	0.01	20	\$0.86	15%	50%	\$72.15	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Ducting	sqft duct	New	0.08	20	\$0.86	15%	50%	\$72.15	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Building Shell - Cool Roofs	sqft roof	New	2.37	20	\$0.81	45%	50%	\$59.53	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.10	20	\$0.81	45%	50%	\$59.53	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.90	20	\$0.81	45%	50%	\$59.53	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Insulation - Wall Cavity	sqft wall	New	-0.13	45	\$1.70	15%	50%	\$105.68	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	Insulation - Wall Cavity	sqft wall	New	0.16	45	\$1.70	15%	50%	\$105.68	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	Insulation - Wall Cavity	sqft wall	New	1.36	45	\$1.70	15%	50%	\$105.68	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	41.90	18	\$0.59	15%	35%	\$1.14	0.00	0.00	Building Energy Simulation Tool
Data Center	Heating	HVAC - Duct Repair and Sealing	tonCool	New	1.25	18	\$0.59	15%	35%	\$1.14	0.00	0.00	Building Energy Simulation Tool
Data Center	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	10.75	18	\$0.59	15%	35%	\$1.14	0.00	0.00	Building Energy Simulation Tool
Data Center	Cooling	Windows - High Efficiency Glazing	sqft window	New	46.85	30	\$37.07	66%	66%	\$35.08	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Data Center	Heating	Windows - High Efficiency Glazing	sqft window	New	8.68	30	\$37.07	66%	66%	\$35.08	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Data Center	Ventilation	Windows - High Efficiency Glazing	sqft window	New	42.89	30	\$37.07	66%	66%	\$35.08	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Data Center	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	11,614.02	10	\$914.46	15%	75%	\$10.96	0.00	0.00	AEG-BEST
Data Center	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	463.95	15	\$248.07	15%	75%	\$60.57	0.01	0.01	AEG-BEST

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Data Center	Cooling	Chiller - Variable Speed Fans	HP fan	New	1,689.50	15	\$263.92	15%	75%	\$17.69	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Data Center	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$49.61	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Data Center	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	48,271.84	10	\$1,796.53	15%	75%	\$15.42	0.00	0.00	AEG-BEST
Data Center	Cooling	HVAC - Economizer	HP cool	New	243.09	5	\$267.96	18%	75%	\$247.54	0.01	0.01	AEG-BEST
Data Center	Cooling	Ventilation - Nighttime Air Purge	sqft	New	2.37	15	\$0.05	10%	15%	\$2.44	0.00	0.00	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Data Center	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	0.05	14	\$5.25	6%	75%	\$9,999.00	0.00	0.00	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	3.56	18	\$0.26	15%	20%	\$7.50	0.01	0.01	RES_HRV-Cooling-7PLN-v1-2
Data Center	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	29,917.45	15	\$189.00	0%	0%	\$0.72	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Data Center	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	10,780.82	15	\$1,273.23	0%	0%	\$13.37	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Data Center	Ventilation	Ventilation - Variable Speed Control	sqft	New	2.18	15	\$0.02	19%	50%	\$0.81	0.02	0.02	AEG-BEST
Data Center	Ventilation	Ventilation - Demand Controlled	sqft	New	0.21	15	\$0.23	9%	25%	\$123.01	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Data Center	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.52	15	\$0.76	3%	8%	\$80.19	0.00	0.00	HVAC_DOAS-Heating-7PLN-v5-25
Data Center	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.56	15	\$0.76	3%	8%	\$80.19	0.00	0.00	HVAC_DOAS-Heating-7PLN-v5-1
Data Center	Cooling	Destratification Fans (HVLS)	Strat Fan	New	25,980.43	15	\$7,501.21	15%	15%	\$28.11	0.00	0.00	HVLS-Cooling-AEG-1
Data Center	Heating	Destratification Fans (HVLS)	Strat Fan	New	4,453.37	15	\$7,501.21	15%	15%	\$28.11	0.00	0.00	HVLS-Heating-AEG-1

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Data Center	Cooling	RTU - Maintenance	tonCool	New	5.62	3	\$33.20	15%	45%	\$2,014.25	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Data Center	Cooling	RTU - Advanced Controls	tonCool	New	388.57	15	\$410.87	15%	45%	\$121.16	0.02	0.02	RTU_CTRL-Cooling-RTF-1.1-1
Data Center	Cooling	RTU - Evaporative Precooler	tonCool	New	369.36	15	\$698.92	15%	75%	\$216.81	0.05	0.05	RTU_PREC-Cooling-XCELCO-2017-18-1
Data Center	Cooling	Ductless Mini Split Heat Pump	tonCool	New	822.99	20	\$391.70	15%	25%	\$44.48	0.00	0.00	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Heating	Ductless Mini Split Heat Pump	tonCool	New	54.91	20	\$391.70	15%	25%	\$44.48	0.00	0.00	DHP-Cooling/Heating-7PLN-v2-1
Data Center	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	3.30	5	\$0.75	30%	40%	\$27.61	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Data Center	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.29	5	\$0.75	30%	40%	\$27.61	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Data Center	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	2.50	5	\$0.75	30%	40%	\$27.61	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Data Center	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	181.20	10	\$8.63	25%	65%	\$6.63	0.00	0.00	DHW_AER-Water Heating-ILTRM-v4.0-1
Data Center	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	199.10	10	\$17.56	25%	65%	(\$78.19)	0.00	0.00	DHW_SHW-Water Heating-RTF-v3.1-4
Data Center	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	49.33	10	\$16.82	25%	65%	(\$106.07)	0.00	0.00	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Data Center	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	15%	20%	\$8.34	0.00	0.00	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Data Center	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	697.00	15	\$15.38	1%	75%	\$2.50	0.00	0.00	AEG-BEST
Data Center	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	742.62	4	\$75.87	25%	40%	(\$75.89)	0.00	0.00	DHW_SPR-Water Heating-RTF-v2.4-1
Data Center	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	0.00	0.00	DHW_STBK-Water Heating-ILTRM-v4.0-4

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Data Center	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,062.15	0.00	0.00	AEG-BEST
Data Center	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.89	15	\$0.36	11%	23%	\$46.56	0.01	0.01	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.25	15	\$0.60	11%	23%	\$54.87	0.02	0.02	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Data Center	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	1,983.99	15	\$56.14	1%	3%	\$3.34	0.00	0.00	CLTG_EXITLEC-Interior Lighting-v2-3
Data Center	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.70	15	\$65.99	1%	3%	\$145.18	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Data Center	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Data Center	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	5,929.60	11	\$26.48	15%	30%	\$0.60	0.00	0.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Data Center	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	607.18	16	\$1,864.95	5%	15%	\$339.77	0.00	0.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Data Center	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.51	9	\$0.65	15%	25%	\$39.62	0.00	0.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Data Center	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	New	91.34	8	\$56.85	15%	25%	\$103.50	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Data Center	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	New	114.21	7	\$3,486.31	15%	30%	\$5,571.48	0.00	0.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Data Center	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	29.35	12	\$50.74	0%	0%	\$220.38	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	7.67	4	\$24.51	0%	0%	\$941.33	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1

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Data Center	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	30.73	15	\$347.21	0%	0%	\$1,330.48	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	34.92	2	\$10.74	0%	0%	\$225.84	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.73	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Data Center	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	12.73	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5
Data Center	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	96.53	15	\$305.13	0%	0%	\$818.69	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Data Center	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	386.58	15	\$539.09	0%	0%	\$164.24	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	812.21	10	\$449.00	0%	0%	\$80.03	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Data Center	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	66.93	16	\$153.90	0%	0%	\$268.99	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Data Center	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	24.07	15	\$135.00	0%	0%	\$676.86	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Data Center	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	222.54	16	\$105.92	0%	0%	\$59.68	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Data Center	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	171.32	10	\$521.11	0%	0%	\$483.62	0.00	0.00	RFG_DDEF-Refrigeration-VTRM-1
Data Center	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	4.00	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Data Center	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	164.55	12	\$5,648.09	0%	0%	\$4,548.81	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1

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Data Center	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	13.15	8	\$15.90	0%	0%	\$194.64	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Data Center	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.35	8	\$3.87	0%	0%	\$459.60	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Data Center	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	4.73	5	\$49.37	0%	0%	\$2,326.15	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Data Center	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,655.17	5	\$288.64	25%	75%	\$38.85	0.00	0.00	VEND_CTRL-Miscellaneous-SCE-17R0-41
Data Center	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	42,040.12	18	\$8,815.42	25%	50%	\$21.81	0.02	0.02	COOK_EXHD-Food Preparation-7PLN-v3-10
Data Center	Cooling	Lodging - Guest Room Controls	LodgUnit	New	2,011.37	15	\$335.00	0%	0%	\$17.71	0.00	0.00	AEG - BEST
Data Center	Heating	Lodging - Guest Room Controls	LodgUnit	New	130.71	15	\$335.00	0%	0%	\$17.71	0.00	0.00	AEG - BEST
Data Center	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	2,389.82	4	\$37.32	10%	50%	\$3.54	0.03	0.02	SMARTSTRIP-Electronics-RTF-v3.2-1
Data Center	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Data Center	Office Equipment	Data Center - Best Practice Measures	sqft	New	13.45	5	\$0.98	20%	75%	\$16.19	0.16	0.15	com-datacenters-7p_v5p.xlsx
Data Center	Cooling	Data Center - Commercially Available Measures	sqft	New	0.06	8	\$0.82	10%	35%	\$39.95	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.04	8	\$0.82	10%	35%	\$39.95	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Office Equipment	Data Center - Commercially Available Measures	sqft	New	3.19	8	\$0.82	10%	35%	\$39.95	0.02	0.02	com-datacenters-7p_v5p.xlsx

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Data Center	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	1.08	6	\$0.13	10%	15%	\$24.41	0.00	0.00	com-datacenters-7p_v5p.xlsx
Data Center	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	102,057.14	18	\$4,231.40	0%	0%	\$4.31	0.00	0.00	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Data Center	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Data Center	Miscellaneous	Pool Pump - Timer	perBldg	New	0.00	10	\$19.59	15%	75%	\$0.00	0.00	0.00	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Data Center	Miscellaneous	Pool Heater - Night Covers	perBldg	New	0.00	5	\$126,044.11	15%	75%	\$0.00	0.00	0.00	PL_COV-Water Heating-SCG-R0-62
Data Center	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.00	10	\$0.09	0%	0%	\$4,093.44	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Data Center	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	185.53	7	\$423.28	0%	0%	(\$474.21)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$474.21)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.00	7	\$423.28	0%	0%	(\$474.21)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Data Center	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	29,151.13	15	\$1,114.41	0%	0%	\$37.97	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	0.00	15	\$1,114.41	0%	0%	\$37.97	0.00	0.00	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Data Center	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	242,731.96	6	\$37.07	1%	3%	\$0.03	0.00	0.00	ESTAR_WC-Miscellaneous-7PLN-v6-1
Data Center	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.81	20	\$7.28	0%	0%	\$891.61	0.00	0.00	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Data Center	Cooling	Advanced New Construction Designs	sqft	New	6.64	25	\$4.24	10%	15%	\$28.35	0.01	0.01	ADVNC-All-RRSCH-1

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Data Center	Heating	Advanced New Construction Designs	sqft	New	0.59	25	\$4.24	10%	15%	\$28.35	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Ventilation	Advanced New Construction Designs	sqft	New	5.04	25	\$4.24	10%	15%	\$28.35	0.01	0.01	ADVNC-AII-RSRCH-1
Data Center	Water Heating	Advanced New Construction Designs	sqft	New	0.17	25	\$4.24	10%	15%	\$28.35	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Interior Lighting	Advanced New Construction Designs	sqft	New	1.89	25	\$4.24	10%	15%	\$28.35	0.01	0.01	ADVNC-AII-RSRCH-1
Data Center	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.37	25	\$4.24	10%	15%	\$28.35	0.00	0.00	ADVNC-AII-RSRCH-1
Data Center	Cooling	Strategic Energy Management	sqft	New	1.03	3	\$1.14	0%	0%	\$65.12	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Heating	Strategic Energy Management	sqft	New	0.09	3	\$1.14	0%	0%	\$65.12	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Ventilation	Strategic Energy Management	sqft	New	0.78	3	\$1.14	0%	0%	\$65.12	0.00	0.00	COM_SEM-HVAC-AEG-1
Data Center	Water Heating	Strategic Energy Management	sqft	New	0.03	3	\$1.14	0%	0%	\$65.12	0.00	0.00	COM_SEM-Water Heating-AEG-1
Data Center	Interior Lighting	Strategic Energy Management	sqft	New	0.29	3	\$1.14	0%	0%	\$65.12	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Exterior Lighting	Strategic Energy Management	sqft	New	0.06	3	\$1.14	0%	0%	\$65.12	0.00	0.00	COM_SEM-Lighting-AEG-1
Data Center	Refrigeration	Strategic Energy Management	sqft	New	0.00	3	\$1.14	0%	0%	\$65.12	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Data Center	Office Equipment	Strategic Energy Management	sqft	New	3.13	3	\$1.14	0%	0%	\$65.12	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Data Center	Cooling	Commissioning	sqft	New	1.42	3	\$5.81	2%	65%	\$647.98	0.04	0.04	COM_CX-HVAC-AEG-1
Data Center	Heating	Commissioning	sqft	New	0.13	3	\$5.81	2%	65%	\$647.98	0.00	0.00	COM_CX-HVAC-AEG-1
Data Center	Ventilation	Commissioning	sqft	New	1.08	3	\$5.81	2%	65%	\$647.98	0.03	0.03	COM_CX-HVAC-AEG-1
Data Center	Water Heating	Commissioning	sqft	New	0.01	3	\$5.81	2%	65%	\$647.98	0.00	0.00	COM_CX-Water Heating-AEG-1

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Data Center	Interior Lighting	Commissioning	sqft	New	0.34	3	\$5.81	2%	65%	\$647.98	0.04	0.04	COM_CX-Lighting-AEG-1
Data Center	Exterior Lighting	Commissioning	sqft	New	0.07	3	\$5.81	2%	65%	\$647.98	0.01	0.01	COM_CX-Lighting-AEG-1
Data Center	Refrigeration	Commissioning	sqft	New	0.00	3	\$5.81	2%	65%	\$647.98	0.00	0.00	COM_CX-Refrigeration-AEG-1
Data Center	Cooling	Retrocommissioning	sqft	New	1.42	3	\$1.84	0%	0%	\$205.68	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Heating	Retrocommissioning	sqft	New	0.13	3	\$1.84	0%	0%	\$205.68	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Ventilation	Retrocommissioning	sqft	New	1.08	3	\$1.84	0%	0%	\$205.68	0.00	0.00	COM_RCX-HVAC-AEG-1
Data Center	Water Heating	Retrocommissioning	sqft	New	0.01	3	\$1.84	0%	0%	\$205.68	0.00	0.00	COM_RCX-Water Heating-AEG-1
Data Center	Interior Lighting	Retrocommissioning	sqft	New	0.34	3	\$1.84	0%	0%	\$205.68	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Exterior Lighting	Retrocommissioning	sqft	New	0.07	3	\$1.84	0%	0%	\$205.68	0.00	0.00	COM_RCX-Lighting-AEG-1
Data Center	Refrigeration	Retrocommissioning	sqft	New	0.00	3	\$1.84	0%	0%	\$205.68	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Data Center	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.24	10	\$0.09	0%	0%	\$54.17	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.00	10	\$1.12	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.00	3	\$0.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.00	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Data Center	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx

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Data Center	Miscellaneous	LED Signage	perBldg	New	107.66	16	\$75.53	20%	75%	\$77.03	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Data Center	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	352,269.03	25	\$537,146.87	0%	75%	\$148.57	0.07	0.07	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	Existing	0.14	45	\$0.84	15%	35%	\$168.56	202.50	199.72	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	Existing	0.27	45	\$0.84	15%	35%	\$168.56	178.60	172.31	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	Existing	0.03	45	\$0.84	15%	35%	\$168.56	51.02	49.34	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	Existing	0.29	20	\$0.86	15%	50%	\$308.33	186.19	183.63	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$308.33	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	Existing	0.00	20	\$0.86	15%	50%	\$308.33	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	Existing	0.32	20	\$0.81	45%	50%	\$905.97	115.12	113.54	Building Energy Simulation Tool
Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	Existing	-0.18	20	\$0.81	45%	50%	\$905.97	-29.77	-28.72	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	Existing	-0.03	20	\$0.81	45%	50%	\$905.97	-14.99	-14.50	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	Existing	-0.06	45	\$1.70	15%	35%	\$107.85	-28.30	-27.91	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	Existing	1.22	45	\$1.70	15%	35%	\$107.85	238.13	229.75	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	Existing	0.22	45	\$1.70	15%	35%	\$107.85	119.96	116.00	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	Existing	2.76	18	\$0.59	15%	50%	\$9,999.00	40.20	39.64	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	Existing	-2.40	18	\$0.59	15%	50%	\$9,999.00	-15.62	-15.07	Building Energy Simulation Tool

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Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	Existing	-0.44	18	\$0.59	15%	50%	\$9,999.00	-7.87	-7.61	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	Existing	6.24	30	\$37.07	48%	48%	\$152.93	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	Existing	15.14	30	\$37.07	48%	48%	\$152.93	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	Existing	1.61	30	\$37.07	48%	48%	\$152.93	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	Existing	1,620.72	10	\$914.46	15%	75%	\$82.34	40.75	40.34	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	Existing	164.80	15	\$248.07	15%	75%	\$178.71	576.23	570.37	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	Existing	384.78	15	\$263.92	15%	75%	\$81.43	134.54	133.17	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	Existing	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	Existing	12,767.95	10	\$1,796.53	15%	75%	\$62.72	104.21	107.01	AEG-BEST
Miscellaneous	Cooling	HVAC - Economizer	HP cool	Existing	55.52	5	\$267.96	18%	75%	\$1,107.60	926.76	899.19	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	Existing	0.32	15	\$0.05	5%	15%	\$19.01	252.67	248.61	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	Existing	3.09	14	\$5.25	3%	75%	\$202.02	717.97	682.67	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	Existing	0.14	18	\$0.26	15%	20%	\$200.92	60.13	58.15	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	Existing	410.18	15	\$189.00	0%	0%	\$53.05	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	Existing	147.81	15	\$1,273.23	0%	0%	\$991.76	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1

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Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	Existing	0.08	15	\$0.04	13%	25%	\$59.91	94.44	90.12	FAN_VSD-Ventilation-MIDATL-v3.0-13
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.01	15	\$0.23	21%	47%	\$3,296.82	20.35	19.42	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.82	15	\$0.76	7%	16%	\$78.59	252.99	240.55	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	Existing	0.29	15	\$0.76	7%	16%	\$78.59	248.96	237.58	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	Existing	3,458.91	15	\$7,501.21	15%	15%	\$77.38	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	Existing	7,770.15	15	\$7,501.21	15%	15%	\$77.38	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	Existing	8.75	3	\$33.20	15%	45%	\$1,311.00	83.16	80.23	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	Existing	87.73	15	\$410.87	15%	45%	\$544.21	753.44	733.13	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	Existing	83.39	15	\$698.92	15%	75%	\$973.89	1,376.22	1,344.84	RTU_PREC-Cooling-XCELCO-2017-18-1
Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	Existing	146.93	20	\$685.47	15%	25%	\$244.87	34.92	36.23	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	Existing	146.79	20	\$685.47	15%	25%	\$244.87	120.60	113.81	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.44	5	\$0.75	30%	40%	\$165.09	320.15	315.76	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.51	5	\$0.75	30%	40%	\$165.09	165.57	159.74	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.09	5	\$0.75	30%	40%	\$165.09	83.40	80.65	STAT_WIFI-AII-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	Existing	55.74	10	\$8.63	25%	65%	\$22.19	92.35	88.74	DHW_AER-Water Heating-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	Existing	61.25	10	\$17.56	25%	65%	(\$261.63)	50.74	48.75	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	Existing	15.18	10	\$16.82	25%	65%	(\$354.93)	12.38	11.89	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	Existing	641.54	11	\$37.97	15%	20%	\$8.17	55.14	53.51	CCIRCMPM_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	Existing	214.37	15	\$15.38	16%	75%	\$8.37	215.64	207.22	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	Existing	228.45	4	\$75.87	25%	40%	(\$253.96)	139.74	134.29	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	Existing	103.59	2	\$5.13	15%	75%	\$24.31	117.27	112.69	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kWh	Existing	13.13	20	\$258.33	1%	30%	\$2,019.56	373.46	358.88	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.44	15	\$0.36	3%	23%	\$98.70	1,035.15	1,030.86	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.61	15	\$0.60	3%	23%	\$116.33	1,449.21	1,443.21	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	Existing	158.60	15	\$56.14	1%	3%	\$44.25	29.69	30.70	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	Existing	53.33	15	\$65.99	1%	3%	\$154.69	1.18	1.22	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	Existing	0.00	15	\$1,040.02	15%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	Existing	2,410.77	11	\$26.48	15%	30%	\$1.55	332.87	329.87	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	Existing	246.86	16	\$1,864.95	5%	15%	\$875.53	227.23	225.19	CLTG_BILVL-Interior Lighting-7PLN-v3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	Existing	2.49	9	\$0.65	15%	25%	\$42.41	296.97	305.63	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fxt	Existing	102.07	8	\$56.85	15%	25%	\$98.26	157.84	162.45	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fxt	Existing	127.63	7	\$3,486.31	15%	30%	\$5,289.57	296.05	304.68	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	Existing	25.02	12	\$50.74	0%	0%	\$270.35	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	Existing	11.78	4	\$24.51	0%	0%	\$760.19	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	Existing	28.02	15	\$347.21	0%	0%	\$1,625.10	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	Existing	33.13	2	\$10.74	0%	0%	\$240.15	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	Existing	0.66	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	Existing	11.60	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO15-4
Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	Existing	87.99	15	\$305.13	0%	0%	\$999.99	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	Existing	352.39	15	\$539.09	0%	0%	\$200.60	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	Existing	740.39	10	\$449.00	0%	0%	\$97.75	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	Existing	62.84	16	\$153.90	0%	0%	\$356.36	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1

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Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	Existing	22.60	15	\$135.00	0%	0%	\$896.70	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	Existing	349.41	16	\$105.92	0%	0%	\$46.83	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	Existing	268.98	10	\$521.11	0%	0%	\$379.52	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	perBldg	Existing	106.26	8	\$18,135.52	0%	0%	\$9,999.00	0.00	0.00	RFG_ADC-Refrigeration-PGE-R6-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	Existing	150.00	12	\$605.15	0%	0%	\$595.30	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	Existing	11.17	8	\$15.90	0%	0%	\$240.21	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	Existing	1.15	8	\$3.87	0%	0%	\$567.20	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	Existing	4.05	5	\$49.37	0%	0%	\$2,849.91	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1
Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	Existing	1,482.68	5	\$288.64	25%	75%	\$45.61	97.63	94.69	VEND_CTRL-Miscellaneous-SCE-17R0-47
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	Existing	1,595.78	18	\$8,815.42	25%	50%	\$584.62	142.89	138.18	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	Existing	203.75	15	\$335.00	0%	0%	\$101.16	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	Existing	192.58	15	\$335.00	0%	0%	\$101.16	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	Existing	12.53	4	\$37.32	10%	50%	\$709.43	124.15	98.69	SMARTSTRIP-Electronics-RTF-v3.2-1

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Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	Existing	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	Existing	0.03	5	\$0.00	0%	0%	\$16.92	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.25	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	Existing	0.00	8	\$0.00	0%	0%	\$2.25	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	Existing	0.01	8	\$0.00	0%	0%	\$2.25	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	Existing	0.00	6	\$0.00	0%	0%	\$11.58	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	Existing	581.09	18	\$4,231.40	0%	5%	\$770.63	17.23	16.67	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	Existing	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3
Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	Existing	63.32	10	\$19.59	15%	75%	\$44.49	0.89	0.86	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	Existing	28.62	5	\$18,906.62	15%	75%	\$9,999.00	0.11	0.11	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	Existing	0.01	10	\$0.19	0%	0%	\$4,483.01	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	57.08	7	\$423.28	0%	0%	(\$1,556.54)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.56	7	\$423.28	0%	0%	(\$1,556.54)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	Existing	0.56	7	\$423.28	0%	0%	(\$1,556.54)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21

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Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	8,967.66	15	\$1,114.41	0%	5%	\$126.65	152.37	146.43	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	Existing	29.40	15	\$1,114.41	0%	5%	\$126.65	0.09	0.09	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	Existing	1,045.99	6	\$37.07	1%	3%	\$6.92	28.51	27.29	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	Existing	0.02	20	\$0.20	0%	5%	\$981.45	6.19	5.86	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	Existing	0.63	25	\$4.24	0%	0%	\$142.81	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	Existing	0.79	25	\$4.24	0%	0%	\$142.81	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	Existing	0.16	25	\$4.24	0%	0%	\$142.81	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	Existing	0.33	25	\$4.24	0%	0%	\$142.81	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	Existing	0.92	25	\$4.24	0%	0%	\$142.81	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	Existing	0.20	25	\$4.24	0%	0%	\$142.81	0.00	0.00	ADVNC-AII-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	Existing	0.14	3	\$0.01	5%	16%	\$8.65	120.44	118.50	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	Existing	0.16	3	\$0.01	5%	16%	\$8.65	62.29	59.22	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	Existing	0.03	3	\$0.01	5%	16%	\$8.65	31.38	29.94	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	Existing	0.05	3	\$0.01	5%	16%	\$8.65	30.69	29.49	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	Existing	0.16	3	\$0.01	5%	16%	\$8.65	147.80	151.56	COM_SEM-Lighting-AEG-1

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Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	Existing	0.03	3	\$0.01	5%	16%	\$8.65	32.22	33.16	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	Existing	0.01	3	\$0.01	5%	16%	\$8.65	6.97	7.46	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	Existing	0.02	3	\$0.01	5%	16%	\$8.65	22.36	17.77	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	Existing	0.19	3	\$0.30	0%	0%	\$150.34	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	Existing	0.22	3	\$0.30	0%	0%	\$150.34	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	Existing	0.04	3	\$0.30	0%	0%	\$150.34	0.00	0.00	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	Existing	0.03	3	\$0.30	0%	0%	\$150.34	0.00	0.00	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	Existing	0.18	3	\$0.30	0%	0%	\$150.34	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	Existing	0.04	3	\$0.30	0%	0%	\$150.34	0.00	0.00	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	Existing	0.02	3	\$0.30	0%	0%	\$150.34	0.00	0.00	COM_CX-Refrigeration-AEG-1
Miscellaneous	Cooling	Retrocommissioning	sqft	Existing	0.19	3	\$0.10	10%	65%	\$47.72	833.81	820.40	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	Existing	0.22	3	\$0.10	10%	65%	\$47.72	431.21	410.01	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	Existing	0.04	3	\$0.10	10%	65%	\$47.72	217.22	207.29	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	Existing	0.03	3	\$0.10	10%	65%	\$47.72	70.81	68.05	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	Existing	0.18	3	\$0.10	10%	65%	\$47.72	852.71	874.40	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	Existing	0.04	3	\$0.10	10%	65%	\$47.72	185.91	191.33	COM_RCX-Lighting-AEG-1

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Miscellaneous	Refrigeration	Retrocommissioning	sqft	Existing	0.02	3	\$0.10	10%	65%	\$47.72	80.45	86.06	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	Existing	0.13	10	\$0.09	0%	0%	\$107.56	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	Existing	0.06	10	\$1.12	0%	0%	\$3,237.36	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	Existing	0.01	3	\$0.24	0%	0%	\$6,400.85	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	Existing	0.03	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	Existing	0.01	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	Existing	141.13	16	\$75.53	20%	75%	\$58.77	56.21	52.53	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	Existing	1,306.70	25	\$2,131.72	0%	0%	\$163.54	0.00	0.00	WHP Analysis
Miscellaneous	Cooling	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$341.11	0.00	0.00	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ceiling	sqft roof	New	0.21	45	\$0.84	15%	50%	\$341.11	86.83	84.24	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ceiling	sqft roof	New	0.00	45	\$0.84	15%	50%	\$341.11	3.15	3.05	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Ducting	sqft duct	New	0.36	20	\$0.86	15%	50%	\$189.71	86.29	83.82	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Ducting	sqft duct	New	0.08	20	\$0.86	15%	50%	\$189.71	8.35	8.10	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Ducting	sqft duct	New	0.02	20	\$0.86	15%	50%	\$189.71	4.81	4.67	Building Energy Simulation Tool
Miscellaneous	Cooling	Building Shell - Cool Roofs	sqft roof	New	0.08	20	\$0.81	45%	50%	\$9,334.78	10.85	10.54	Building Energy Simulation Tool

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Miscellaneous	Heating	Building Shell - Cool Roofs	sqft roof	New	-0.06	20	\$0.81	45%	50%	\$9,334.78	-3.40	-3.30	Building Energy Simulation Tool
Miscellaneous	Ventilation	Building Shell - Cool Roofs	sqft roof	New	-0.01	20	\$0.81	45%	50%	\$9,334.78	-1.96	-1.90	Building Energy Simulation Tool
Miscellaneous	Cooling	Insulation - Wall Cavity	sqft wall	New	0.00	45	\$1.70	15%	50%	\$613.82	-0.46	-0.45	Building Energy Simulation Tool
Miscellaneous	Heating	Insulation - Wall Cavity	sqft wall	New	0.20	45	\$1.70	15%	50%	\$613.82	24.64	23.90	Building Energy Simulation Tool
Miscellaneous	Ventilation	Insulation - Wall Cavity	sqft wall	New	0.04	45	\$1.70	15%	50%	\$613.82	14.20	13.78	Building Energy Simulation Tool
Miscellaneous	Cooling	HVAC - Duct Repair and Sealing	tonCool	New	2.09	18	\$0.59	15%	50%	\$6.17	11.15	10.82	Building Energy Simulation Tool
Miscellaneous	Heating	HVAC - Duct Repair and Sealing	tonCool	New	6.49	18	\$0.59	15%	50%	\$6.17	14.85	14.40	Building Energy Simulation Tool
Miscellaneous	Ventilation	HVAC - Duct Repair and Sealing	tonCool	New	1.36	18	\$0.59	15%	50%	\$6.17	8.56	8.30	Building Energy Simulation Tool
Miscellaneous	Cooling	Windows - High Efficiency Glazing	sqft window	New	4.43	30	\$37.07	66%	66%	\$197.48	0.00	0.00	WND_FLM-Cooling-7PLN-v3-2
Miscellaneous	Heating	Windows - High Efficiency Glazing	sqft window	New	11.64	30	\$37.07	66%	66%	\$197.48	0.00	0.00	WND_FLM-Heating-7PLN-v3-2
Miscellaneous	Ventilation	Windows - High Efficiency Glazing	sqft window	New	1.40	30	\$37.07	66%	66%	\$197.48	0.00	0.00	WND_FLM-Ventilation-7PLN-v3-2
Miscellaneous	Cooling	Chiller - Chilled Water Reset	ChillCtrl	New	1,216.42	10	\$914.46	15%	75%	\$104.67	5.22	4.90	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Flow Chilled Water Pump	HP cool	New	123.69	15	\$248.07	15%	75%	\$227.18	91.76	86.70	AEG-BEST
Miscellaneous	Cooling	Chiller - Variable Speed Fans	HP fan	New	288.80	15	\$263.92	15%	75%	\$103.52	21.42	20.24	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Miscellaneous	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	HP cool	New	0.00	15	\$173.65	15%	75%	\$0.00	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Miscellaneous	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	ChillCtrl	New	8,550.77	10	\$1,796.53	15%	75%	\$87.03	12.51	11.75	AEG-BEST

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Miscellaneous	Cooling	HVAC - Economizer	HP cool	New	39.15	5	\$267.96	18%	75%	\$1,538.67	63.34	59.38	AEG-BEST
Miscellaneous	Cooling	Ventilation - Nighttime Air Purge	sqft	New	0.22	15	\$0.05	10%	15%	\$25.84	18.69	17.72	CVENT_NIGHTPURGE-Cooling-E3T-102-1
Miscellaneous	Heating	Space Heating - Heat Recovery Ventilator	CFM	New	2.38	14	\$5.25	6%	75%	\$259.70	102.72	96.99	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - ECM on VAV Boxes	sqft	New	0.12	18	\$0.26	15%	20%	\$227.87	18.47	17.90	RES_HRV-Cooling-7PLN-v1-2
Miscellaneous	Ventilation	Ventilation - Permanent Magnet Synchronous Fan Motor	HP vent	New	381.22	15	\$189.00	0%	0%	\$56.14	0.00	0.00	VENT_PMSM-Ventilation-AEG-2016-2
Miscellaneous	Ventilation	Ventilation - Fan Drive Improvements	HP vent	New	137.37	15	\$1,273.23	0%	0%	\$1,049.46	0.00	0.00	VENT_FANDRIVE-Ventilation-DOE-R&D2015-1
Miscellaneous	Ventilation	Ventilation - Variable Speed Control	sqft	New	0.07	15	\$0.04	19%	25%	\$63.40	7.83	7.40	AEG-BEST
Miscellaneous	Ventilation	Ventilation - Demand Controlled	sqft	New	0.01	15	\$0.23	21%	47%	\$3,738.99	3.55	3.36	VENT_DCV-Ventilation-7PLN-v5-5
Miscellaneous	Heating	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.70	15	\$0.76	7%	16%	\$90.68	43.04	40.68	HVAC_DOAS-Heating-7PLN-v5-25
Miscellaneous	Ventilation	HVAC - Dedicated Outdoor Air System (DOAS)	sqft	New	0.26	15	\$0.76	7%	16%	\$90.68	43.47	41.07	HVAC_DOAS-Heating-7PLN-v5-1
Miscellaneous	Cooling	Destratification Fans (HVLS)	Strat Fan	New	2,457.55	15	\$7,501.21	15%	15%	\$101.14	0.00	0.00	HVLS-Cooling-AEG-1
Miscellaneous	Heating	Destratification Fans (HVLS)	Strat Fan	New	5,970.46	15	\$7,501.21	15%	15%	\$101.14	0.00	0.00	HVLS-Heating-AEG-1
Miscellaneous	Cooling	RTU - Maintenance	tonCool	New	6.04	3	\$33.20	15%	45%	\$1,873.52	2.69	2.51	RTU_MNT-Cooling-PGE-R2-1
Miscellaneous	Cooling	RTU - Advanced Controls	tonCool	New	60.53	15	\$410.87	15%	45%	\$777.73	176.28	169.62	RTU_CTRL-Cooling-RTF-1.1-1
Miscellaneous	Cooling	RTU - Evaporative Precooler	tonCool	New	57.53	15	\$698.92	15%	75%	\$1,391.77	391.97	380.24	RTU_PREC-Cooling-XCELCO-2017-18-1

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Miscellaneous	Cooling	Ductless Mini Split Heat Pump	tonCool	New	104.30	20	\$685.47	15%	25%	\$311.53	7.33	6.96	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Heating	Ductless Mini Split Heat Pump	tonCool	New	115.04	20	\$685.47	15%	25%	\$311.53	23.53	22.35	DHP-Cooling/Heating-7PLN-v2-1
Miscellaneous	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	30%	40%	\$214.29	26.78	25.51	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.39	5	\$0.75	30%	40%	\$214.29	14.38	13.66	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.08	5	\$0.75	30%	40%	\$214.29	8.29	7.87	STAT_WIFI-All-7PLN-v2-1
Miscellaneous	Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	Faucet	New	53.04	10	\$8.63	25%	65%	\$22.65	12.10	11.33	DHW_AER-Water Heating-ILTRM-v4.0-1
Miscellaneous	Water Heating	Water Heater - Low-Flow Showerheads	Showerhead	New	58.28	10	\$17.56	25%	65%	(\$267.09)	6.65	6.22	DHW_SHW-Water Heating-RTF-v3.1-4
Miscellaneous	Water Heating	Water Heater - Thermostatic Shower Restriction Valve	Showerhead	New	14.44	10	\$16.82	25%	65%	(\$362.34)	1.94	1.82	CDHW_TSRVLV-Water Heating-RTF-v1.3-1
Miscellaneous	Water Heating	Water Heater - High Efficiency Circulation Pump	WHunits	New	610.47	11	\$37.97	15%	20%	\$8.34	14.44	13.93	CCIRCPMP_UPG-Water Heating-RTF-v1.2-15
Miscellaneous	Water Heating	Water Heater - Pipe Insulation	PipeFeet	New	203.99	15	\$15.38	1%	75%	\$8.54	52.35	49.46	AEG-BEST
Miscellaneous	Water Heating	Water Heater - Pre-Rinse Spray Valve	Faucet	New	217.39	4	\$75.87	25%	40%	(\$259.26)	10.69	9.95	DHW_SPR-Water Heating-RTF-v2.4-1
Miscellaneous	Water Heating	Water Heater - Temperature Setback	WHunits	New	98.58	2	\$5.13	15%	75%	\$24.82	4.78	4.43	DHW_STBK-Water Heating-ILTRM-v4.0-4
Miscellaneous	Water Heating	Water Heater - Solar System	DHW kBtuh	New	12.49	20	\$258.33	1%	30%	\$2,061.73	74.49	70.45	AEG-BEST
Miscellaneous	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.40	15	\$0.36	11%	23%	\$102.35	414.12	404.27	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Miscellaneous	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.57	15	\$0.60	11%	23%	\$120.63	579.76	565.98	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Miscellaneous	Interior Lighting	Interior Lighting - LEC Exit Lighting	Exit Sign	New	146.12	15	\$56.14	1%	3%	\$45.82	4.87	4.75	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	occ sens	New	53.40	15	\$65.99	1%	3%	\$147.40	0.19	0.19	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Miscellaneous	Interior Lighting	Interior Lighting - Skylights	1000 sqft	New	0.00	15	\$1,040.02	18%	25%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Miscellaneous	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	daylt sens	New	2,222.06	11	\$26.48	15%	30%	\$1.60	55.16	52.45	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Miscellaneous	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	1000 sqft	New	227.54	16	\$1,864.95	5%	15%	\$904.12	45.28	43.26	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	ELtg Watts	New	2.28	9	\$0.65	15%	25%	\$44.30	42.82	41.90	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Miscellaneous	Exterior Lighting	Exterior Lighting - Enhanced Controls	Ext Fixt	New	93.50	8	\$56.85	15%	25%	\$102.64	21.03	20.58	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Miscellaneous	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Ext Fixt	New	116.91	7	\$3,486.31	15%	30%	\$5,525.06	35.72	34.94	CLTG_EXT_PV-Exterior Lighting-AEG-2
Miscellaneous	Refrigeration	Refrigeration - Anti-Sweat Heater Controls	Fridge Feet	New	23.45	12	\$50.74	0%	0%	\$275.76	0.00	0.00	RFG_ASH-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - Door Gasket Replacement	Disp Perimeter	New	10.25	4	\$24.51	0%	0%	\$843.41	0.00	0.00	RFG_GSKT-Refrigeration-MEMD-v. 2014-1
Miscellaneous	Refrigeration	Refrigeration - Floating Head Pressure	Fridge HP	New	25.62	15	\$347.21	0%	0%	\$1,693.68	0.00	0.00	RFG_FHPC-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Strip Curtain	WalkIn Door	New	27.77	2	\$10.74	0%	0%	\$282.44	0.00	0.00	RFG_STR-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Refrigeration - High Efficiency Compressor	Fridge kBTuh	New	0.60	15	\$508.61	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-3
Miscellaneous	Refrigeration	Refrigeration - Variable Speed Compressor	Fridge Ton	New	10.61	15	\$5,552.98	0%	0%	\$9,999.00	0.00	0.00	RFG_HECOMP-Refrigeration-AEO17-5

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Miscellaneous	Refrigeration	Refrigeration - ECM Compressor Head Fan Motor	Fridge Motor	New	80.48	15	\$305.13	0%	0%	\$1,042.19	0.00	0.00	RFG_COMP_FANMTR-Refrigeration-RTF-v2.1-1
Miscellaneous	Refrigeration	Refrigeration - Evaporative Condenser	Fridge Case	New	322.28	15	\$539.09	0%	0%	\$209.07	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - Replace Single-Compressor with Subcooled Multiplex	Fridge Case	New	677.12	10	\$449.00	0%	0%	\$101.88	0.00	0.00	RFG_EVAPCOND-Refrigeration-PGE-R2-18
Miscellaneous	Refrigeration	Refrigeration - ECM Evaporator Fan Motor	Fridge Case	New	55.22	16	\$153.90	0%	0%	\$389.48	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-7PLN-v7-1
Miscellaneous	Refrigeration	Refrigeration - Permanent Magnet Synchronous Fan Motor	Fridge Evap Fan	New	19.86	15	\$135.00	0%	0%	\$980.04	0.00	0.00	RFG_PMSM-Refrigeration-CALTF-v1.12-1
Miscellaneous	Refrigeration	Refrigeration - Evaporator Fan Controls	Fridge Case	New	302.45	16	\$105.92	0%	0%	\$52.38	0.00	0.00	RFG_EFAN_CTRL-Refrigeration-RTF-v2.1-2
Miscellaneous	Refrigeration	Refrigeration - Demand Defrost	Fridge Case	New	232.83	10	\$521.11	0%	0%	\$424.49	0.00	0.00	RFG_DDEF-Refrigeration-VTTRM-1
Miscellaneous	Refrigeration	Refrigeration - Automatic Door Closer	WalkIn Door	New	3.18	8	\$647.70	0%	0%	\$9,999.00	0.00	0.00	RFG_ASH-Refrigeration-NMTRM-2016-1
Miscellaneous	Refrigeration	Refrigeration - Low-Heat/No-Heat Doors	Fridge Case	New	137.18	12	\$5,648.09	0%	0%	\$5,790.58	0.00	0.00	RFG_ZERO-EDOOR-Refrigeration-SCE-R2-1
Miscellaneous	Refrigeration	Grocery - Display Case - LED Lighting	Fridge Ltg Ft	New	10.51	8	\$15.90	0%	0%	\$243.56	0.00	0.00	RFG_LED-Refrigeration-RTF-v1.1-6
Miscellaneous	Refrigeration	Grocery - Display Case Motion Sensors	Fridge Feet	New	1.08	8	\$3.87	0%	0%	\$575.11	0.00	0.00	RFG_SENS-Refrigeration-7PLN-v6-1
Miscellaneous	Refrigeration	Grocery - Open Display Case - Night Covers	Fridge Feet Open	New	3.78	5	\$49.37	0%	0%	\$2,910.76	0.00	0.00	RFG_ODSP_COV-Refrigeration-ILTRM-v4.0-1

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Miscellaneous	Refrigeration	Vending Machine - Occupancy Sensor	Vend Count	New	1,378.17	5	\$288.64	25%	75%	\$46.66	9.10	8.49	VEND_CTRL-Miscellaneous-SCE-17R0-41
Miscellaneous	Ventilation	Cooking - Exhaust Hoods with Sensor Control	Kitch Hood	New	1,383.80	18	\$8,815.42	25%	50%	\$663.03	43.89	42.54	COOK_EXHD-Food Preparation-7PLN-v3-10
Miscellaneous	Cooling	Lodging - Guest Room Controls	LodgUnit	New	145.67	15	\$335.00	0%	0%	\$126.68	0.00	0.00	AEG - BEST
Miscellaneous	Heating	Lodging - Guest Room Controls	LodgUnit	New	153.87	15	\$335.00	0%	0%	\$126.68	0.00	0.00	AEG - BEST
Miscellaneous	Office Equipment	Office Equipment - Advanced Power Strips	Smart Strip	New	12.18	4	\$37.32	10%	50%	\$739.69	8.98	7.21	SMARTSTRIP-Electronics-RTF-v3.2-1
Miscellaneous	Office Equipment	Office Equipment - Power Management	Computers	New	0.00	5	\$29.74	0%	0%	\$0.00	0.00	0.00	COM_NTWRK-Office Equipment-ILTRM-v4.0-3
Miscellaneous	Office Equipment	Data Center - Best Practice Measures	sqft	New	0.02	5	\$0.00	0%	0%	\$16.19	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Cooling	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Data Center - Commercially Available Measures	sqft	New	0.00	8	\$0.00	0%	0%	\$2.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Commercially Available Measures	sqft	New	0.01	8	\$0.00	0%	0%	\$2.10	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Office Equipment	Data Center - Cutting Edge Measures	sqft	New	0.00	6	\$0.00	0%	0%	\$6.18	0.00	0.00	com-datacenters-7p_v5p.xlsx
Miscellaneous	Ventilation	Optimized Variable Volume Lab Hood Design	perBldg	New	503.90	18	\$4,231.40	0%	5%	\$873.99	5.29	5.13	VVLABHD-HVAC - Ventilation-7PLN-v2-1
Miscellaneous	Refrigeration	ENERGY STAR Ultra-Low Temperature Freezer	perBldg	New	0.00	12	\$2,098.57	0%	0%	\$0.00	0.00	0.00	RFG_ULTRFRZ_ESTAR-Refrigeration-PGE-R0-3

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Miscellaneous	Miscellaneous	Pool Pump - Timer	perBldg	New	60.68	10	\$19.59	15%	75%	\$44.95	0.22	0.21	PLPMP_TIM-Miscellaneous-IESOTRM-2015-1
Miscellaneous	Miscellaneous	Pool Heater - Night Covers	perBldg	New	28.10	5	\$18,906.62	15%	75%	\$9,999.00	0.01	0.01	PL_COV-Water Heating-SCG-R0-62
Miscellaneous	Water Heating	Commercial Laundry - Ozone Treatment	sqft	New	0.01	10	\$0.17	0%	0%	\$4,293.80	0.00	0.00	CW_OZON-Water Heating-ILTRM-v4.0-2
Miscellaneous	Water Heating	Commercial Laundry - ENERGY STAR Washer	perBldg	New	54.31	7	\$423.28	0%	0%	(\$1,588.79)	0.00	0.00	CW-Water Heating-RTF-v5.1-12
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.53	7	\$423.28	0%	0%	(\$1,588.79)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Miscellaneous	Commercial Laundry - ENERGY STAR Washer	perBldg	New	0.53	7	\$423.28	0%	0%	(\$1,588.79)	0.00	0.00	CW-Miscellaneous-RTF-v5.1-21
Miscellaneous	Water Heating	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	8,533.33	15	\$1,114.41	0%	5%	\$129.30	29.64	28.01	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	Commercial Laundry - Alternative Dry-Cleaning Methods	perBldg	New	27.08	15	\$1,114.41	0%	5%	\$129.30	0.02	0.02	CW_ALTDYCLN-Miscellaneous-SCE-ET05.01-6
Miscellaneous	Miscellaneous	ENERGY STAR Water Cooler	Wtr Cooler	New	1,041.34	6	\$37.07	1%	3%	\$6.95	4.70	4.51	ESTAR_WC-Miscellaneous-7PLN-v6-1
Miscellaneous	Miscellaneous	Miscellaneous - Improved Vertical Lift Technology	sqft	New	0.02	20	\$0.18	0%	5%	\$891.61	1.24	1.17	CMSC_LIFT-Miscellaneous-DOE-RD&D2015-2
Miscellaneous	Cooling	Advanced New Construction Designs	sqft	New	0.63	25	\$4.24	10%	15%	\$138.35	65.82	64.06	ADVNC-AII-RSRCH-1
Miscellaneous	Heating	Advanced New Construction Designs	sqft	New	0.79	25	\$4.24	10%	15%	\$138.35	35.35	34.37	ADVNC-AII-RSRCH-1
Miscellaneous	Ventilation	Advanced New Construction Designs	sqft	New	0.16	25	\$4.24	10%	15%	\$138.35	20.38	19.81	ADVNC-AII-RSRCH-1
Miscellaneous	Water Heating	Advanced New Construction Designs	sqft	New	0.34	25	\$4.24	10%	15%	\$138.35	22.21	21.59	ADVNC-AII-RSRCH-1
Miscellaneous	Interior Lighting	Advanced New Construction Designs	sqft	New	0.93	25	\$4.24	10%	15%	\$138.35	425.23	418.50	ADVNC-AII-RSRCH-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Exterior Lighting	Advanced New Construction Designs	sqft	New	0.20	25	\$4.24	10%	15%	\$138.35	68.87	68.10	ADVNC-All-RSRCH-1
Miscellaneous	Cooling	Strategic Energy Management	sqft	New	0.10	3	\$0.01	16%	16%	\$7.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Heating	Strategic Energy Management	sqft	New	0.12	3	\$0.01	16%	16%	\$7.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Ventilation	Strategic Energy Management	sqft	New	0.03	3	\$0.01	16%	16%	\$7.00	0.00	0.00	COM_SEM-HVAC-AEG-1
Miscellaneous	Water Heating	Strategic Energy Management	sqft	New	0.05	3	\$0.01	16%	16%	\$7.00	0.00	0.00	COM_SEM-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Strategic Energy Management	sqft	New	0.14	3	\$0.01	16%	16%	\$7.00	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Strategic Energy Management	sqft	New	0.03	3	\$0.01	16%	16%	\$7.00	0.00	0.00	COM_SEM-Lighting-AEG-1
Miscellaneous	Refrigeration	Strategic Energy Management	sqft	New	0.01	3	\$0.01	16%	16%	\$7.00	0.00	0.00	COM_SEM-Refrigeration-AEG-1
Miscellaneous	Office Equipment	Strategic Energy Management	sqft	New	0.02	3	\$0.01	16%	16%	\$7.00	0.00	0.00	COM_SEM-Office Equipment-AEG-1
Miscellaneous	Cooling	Commissioning	sqft	New	0.13	3	\$0.20	10%	65%	\$118.80	234.10	225.52	COM_CX-HVAC-AEG-1
Miscellaneous	Heating	Commissioning	sqft	New	0.17	3	\$0.20	10%	65%	\$118.80	125.74	120.90	COM_CX-HVAC-AEG-1
Miscellaneous	Ventilation	Commissioning	sqft	New	0.04	3	\$0.20	10%	65%	\$118.80	72.49	69.68	COM_CX-HVAC-AEG-1
Miscellaneous	Water Heating	Commissioning	sqft	New	0.02	3	\$0.20	10%	65%	\$118.80	26.33	25.31	COM_CX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Commissioning	sqft	New	0.17	3	\$0.20	10%	65%	\$118.80	1,260.28	1,235.10	COM_CX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Commissioning	sqft	New	0.04	3	\$0.20	10%	65%	\$118.80	204.12	201.20	COM_CX-Lighting-AEG-1
Miscellaneous	Refrigeration	Commissioning	sqft	New	0.02	3	\$0.20	10%	65%	\$118.80	21.67	21.35	COM_CX-Refrigeration-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Miscellaneous	Cooling	Retrocommissioning	sqft	New	0.13	3	\$0.06	0%	0%	\$37.71	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Heating	Retrocommissioning	sqft	New	0.17	3	\$0.06	0%	0%	\$37.71	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Ventilation	Retrocommissioning	sqft	New	0.04	3	\$0.06	0%	0%	\$37.71	0.00	0.00	COM_RCX-HVAC-AEG-1
Miscellaneous	Water Heating	Retrocommissioning	sqft	New	0.02	3	\$0.06	0%	0%	\$37.71	0.00	0.00	COM_RCX-Water Heating-AEG-1
Miscellaneous	Interior Lighting	Retrocommissioning	sqft	New	0.17	3	\$0.06	0%	0%	\$37.71	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Exterior Lighting	Retrocommissioning	sqft	New	0.04	3	\$0.06	0%	0%	\$37.71	0.00	0.00	COM_RCX-Lighting-AEG-1
Miscellaneous	Refrigeration	Retrocommissioning	sqft	New	0.02	3	\$0.06	0%	0%	\$37.71	0.00	0.00	COM_RCX-Refrigeration-AEG-1
Miscellaneous	Interior Lighting	Controlled Atmosphere - Lighting Controls	sqft	New	0.12	10	\$0.09	0%	0%	\$111.39	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Retrofit	sqft	New	0.05	10	\$1.12	0%	0%	\$3,373.98	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Refrigeration Tuneup	sqft	New	0.01	3	\$0.24	0%	0%	\$6,670.97	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - CO2 Scrubber Retrofit	sqft	New	0.02	10	\$3.24	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Refrigeration	Controlled Atmosphere - Nitrogen Membrane Retrofit	sqft	New	0.00	10	\$0.70	0%	0%	\$9,999.00	0.00	0.00	Controlled Atmosphere Measure Inputs.xlsx
Miscellaneous	Miscellaneous	LED Signage	perBldg	New	140.50	16	\$75.53	20%	75%	\$59.03	9.64	9.10	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Miscellaneous	Miscellaneous	WHP - Elevator Regeneration	perbldg	New	1,393.75	25	\$2,125.21	0%	0%	\$148.57	0.00	0.00	WHP Analysis

Industrial Measures

California Industrial Measures Assumptions

Table I-11 Summary of Industrial Measure Assumptions in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.01	20	\$0.11	3%	100%	\$12.78	2.31	2.31	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.28	25	\$0.38	3%	100%	\$65.14	3.07	3.07	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	0.21	25	\$0.05	12%	100%	\$28.12	1.73	1.73	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$27.46	0.16	0.16	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.12	2%	100%	\$27.46	0.51	0.51	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$63.27	16.50	16.50	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.56)	2.92	3.38	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.26)	97.50	90.22	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	1.40	17	\$0.02	100%	100%	\$0.44	6.16	5.88	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.40)	0.37	0.35	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.24	100%	100%	(\$0.38)	22.39	21.24	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	9.72	17	\$0.06	100%	100%	\$0.25	1.42	1.37	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.04	20	\$0.11	3%	100%	\$12.39	1.44	1.44	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.37	25	\$0.38	3%	100%	\$62.36	1.96	1.96	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	New	0.24	25	\$0.05	12%	100%	\$24.68	1.26	1.26	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$24.73	0.12	0.12	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.12	2%	100%	\$24.73	0.38	0.38	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$63.47	10.84	10.84	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.56)	1.48	1.35	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.26)	62.25	58.49	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	New	1.40	17	\$0.02	100%	100%	\$0.44	3.21	3.08	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.40)	0.17	0.14	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.24	100%	100%	(\$0.38)	14.91	14.31	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	9.72	17	\$0.06	100%	100%	\$0.25	0.75	0.73	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.02	20	\$0.22	3%	100%	\$12.78	0.07	0.07	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.55	25	\$0.77	3%	100%	\$63.49	0.09	0.09	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	Existing	0.42	25	\$0.10	12%	100%	\$28.12	0.05	0.05	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.27	15	\$0.23	2%	100%	\$27.46	0.00	0.00	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.85	15	\$0.23	2%	100%	\$27.46	0.02	0.02	AEG BEST
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$63.27	0.50	0.50	AEG-BEST
Mining	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.06)	0.14	0.16	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.03)	4.51	4.17	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	Existing	2.81	17	\$0.00	100%	100%	\$0.05	0.28	0.27	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.05)	0.02	0.02	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.05	100%	100%	(\$0.04)	1.04	0.98	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	Existing	19.44	17	\$0.01	100%	100%	\$0.03	0.07	0.06	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.08	20	\$0.22	3%	100%	\$12.39	0.04	0.04	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.73	25	\$0.77	3%	100%	\$60.86	0.06	0.06	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	12%	100%	\$24.68	0.04	0.04	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.73	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.94	15	\$0.23	2%	100%	\$24.73	0.01	0.01	AEG BEST
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$63.47	0.33	0.33	AEG-BEST
Mining	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.06)	0.07	0.06	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.03)	2.88	2.70	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	New	2.81	17	\$0.00	100%	100%	\$0.05	0.15	0.14	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.05)	0.01	0.01	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.05	100%	100%	(\$0.04)	0.69	0.66	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	New	19.44	17	\$0.01	100%	100%	\$0.03	0.03	0.03	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.01	20	\$0.11	3%	100%	\$12.78	1.96	1.96	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.28	25	\$0.38	3%	100%	\$63.49	2.57	2.57	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.21	25	\$0.05	12%	100%	\$28.12	1.47	1.47	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$27.46	0.14	0.14	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.12	2%	100%	\$27.46	0.44	0.44	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$63.27	14.01	14.01	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.02)	6.13	7.09	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.01)	204.45	189.17	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.40	17	\$0.00	100%	100%	\$0.02	12.93	12.33	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.02)	0.77	0.73	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.01	100%	100%	(\$0.02)	46.95	44.53	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	9.72	17	\$0.00	100%	100%	\$0.01	2.98	2.87	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.04	20	\$0.11	3%	100%	\$12.39	1.23	1.23	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.37	25	\$0.38	3%	100%	\$60.86	1.64	1.64	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	New	0.24	25	\$0.05	12%	100%	\$24.68	1.07	1.07	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$24.73	0.11	0.11	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.12	2%	100%	\$24.73	0.32	0.32	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$63.47	9.21	9.21	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.02)	3.11	2.82	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.01)	130.53	122.64	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	1.40	17	\$0.00	100%	100%	\$0.02	6.74	6.46	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.02)	0.36	0.29	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.01	100%	100%	(\$0.02)	31.26	30.01	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	9.72	17	\$0.00	100%	100%	\$0.01	1.57	1.52	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.22	20	\$0.02	3%	100%	\$12.78	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.28	25	\$0.09	3%	100%	\$63.49	0.00	0.00	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.05	25	\$0.01	12%	100%	\$28.12	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.03	15	\$0.03	2%	100%	\$27.46	0.00	0.00	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.09	15	\$0.03	2%	100%	\$27.46	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.69	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.69	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	25.22	20	\$14.78	100%	100%	\$63.27	0.00	0.00	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.39	8	\$0.00	100%	100%	(\$4.59)	0.00	0.00	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	9.04	15	\$0.00	100%	100%	(\$2.09)	0.02	0.02	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.31	17	\$0.03	100%	100%	\$3.62	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	1.13	8	\$0.00	100%	100%	(\$3.28)	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	24.24	15	\$0.44	100%	100%	(\$3.06)	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	2.16	17	\$0.11	100%	100%	\$2.02	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.23	20	\$0.02	3%	100%	\$12.39	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.30	25	\$0.09	3%	100%	\$60.86	0.00	0.00	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	0.05	25	\$0.01	12%	100%	\$24.68	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.03	15	\$0.03	2%	100%	\$24.73	0.00	0.00	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.10	15	\$0.03	2%	100%	\$24.73	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.69	0%	100%	\$0.00	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.69	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	25.14	20	\$14.78	100%	100%	\$63.47	0.00	0.00	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	New	0.39	8	\$0.00	100%	100%	(\$4.59)	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	New	9.04	15	\$0.00	100%	100%	(\$2.09)	0.01	0.01	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	0.31	17	\$0.03	100%	100%	\$3.62	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	New	1.13	8	\$0.00	100%	100%	(\$3.28)	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	24.24	15	\$0.44	100%	100%	(\$3.06)	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	2.16	17	\$0.11	100%	100%	\$2.02	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.81	20	\$0.09	3%	100%	\$12.78	0.01	0.01	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.02	25	\$0.31	3%	100%	\$63.49	0.01	0.01	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	0.17	25	\$0.04	12%	100%	\$28.12	0.01	0.01	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.11	15	\$0.09	2%	100%	\$27.46	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.34	15	\$0.09	2%	100%	\$27.46	0.00	0.00	AEG BEST
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	90.78	20	\$53.22	100%	100%	\$63.27	0.05	0.05	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	Existing	1.41	8	\$0.00	100%	100%	(\$0.77)	0.01	0.01	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	Existing	32.54	15	\$0.00	100%	100%	(\$0.35)	0.25	0.23	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	1.12	17	\$0.02	100%	100%	\$0.61	0.02	0.01	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	Existing	4.08	8	\$0.00	100%	100%	(\$0.55)	0.00	0.00	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	87.25	15	\$0.26	100%	100%	(\$0.51)	0.06	0.05	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	7.78	17	\$0.07	100%	100%	\$0.34	0.00	0.00	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.83	20	\$0.09	3%	100%	\$12.39	0.00	0.00	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.09	25	\$0.31	3%	100%	\$60.86	0.01	0.01	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	0.19	25	\$0.04	12%	100%	\$24.68	0.00	0.00	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.12	15	\$0.09	2%	100%	\$24.73	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.38	15	\$0.09	2%	100%	\$24.73	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	90.50	20	\$53.22	100%	100%	\$63.47	0.03	0.03	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	New	1.41	8	\$0.00	100%	100%	(\$0.77)	0.00	0.00	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	New	32.54	15	\$0.00	100%	100%	(\$0.35)	0.16	0.15	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	1.12	17	\$0.02	100%	100%	\$0.61	0.01	0.01	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	New	4.08	8	\$0.00	100%	100%	(\$0.55)	0.00	0.00	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	87.25	15	\$0.26	100%	100%	(\$0.51)	0.04	0.04	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	7.78	17	\$0.07	100%	100%	\$0.34	0.00	0.00	USDOE SSL Projections - 2016
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.02	20	\$0.22	3%	100%	\$12.78	0.03	0.03	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.55	25	\$0.77	3%	100%	\$63.49	0.04	0.04	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	0.42	25	\$0.10	12%	100%	\$28.12	0.03	0.03	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.27	15	\$0.23	2%	100%	\$27.46	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.85	15	\$0.23	2%	100%	\$27.46	0.01	0.01	AEG BEST
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$63.27	0.24	0.24	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.51)	0.04	0.05	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.23)	1.38	1.28	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	2.81	17	\$0.03	100%	100%	\$0.40	0.09	0.08	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.36)	0.01	0.00	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.44	100%	100%	(\$0.34)	0.32	0.30	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	19.44	17	\$0.11	100%	100%	\$0.22	0.02	0.02	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.08	20	\$0.22	3%	100%	\$12.39	0.02	0.02	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.73	25	\$0.77	3%	100%	\$60.86	0.03	0.03	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	12%	100%	\$24.68	0.02	0.02	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.73	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.94	15	\$0.23	2%	100%	\$24.73	0.01	0.01	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$63.47	0.16	0.16	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.51)	0.02	0.02	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.23)	0.88	0.83	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	2.81	17	\$0.03	100%	100%	\$0.40	0.05	0.04	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.36)	0.00	0.00	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.44	100%	100%	(\$0.34)	0.21	0.20	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	19.44	17	\$0.11	100%	100%	\$0.22	0.01	0.01	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.40	20	\$0.04	3%	100%	\$12.78	0.14	0.14	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.51	25	\$0.15	3%	100%	\$63.49	0.18	0.18	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.08	25	\$0.02	12%	100%	\$28.12	0.10	0.10	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.05	15	\$0.05	2%	100%	\$27.46	0.01	0.01	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.17	15	\$0.05	2%	100%	\$27.46	0.03	0.03	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.24	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.24	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	45.39	20	\$26.61	100%	100%	\$63.27	0.98	0.98	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.71	8	\$0.00	100%	100%	(\$0.29)	0.15	0.17	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	16.27	15	\$0.00	100%	100%	(\$0.13)	4.96	4.59	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.56	17	\$0.00	100%	100%	\$0.23	0.31	0.30	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	2.04	8	\$0.00	100%	100%	(\$0.21)	0.02	0.02	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	43.62	15	\$0.05	100%	100%	(\$0.19)	1.14	1.08	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	3.89	17	\$0.01	100%	100%	\$0.13	0.07	0.07	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.42	20	\$0.04	3%	100%	\$12.39	0.09	0.09	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.55	25	\$0.15	3%	100%	\$60.86	0.12	0.12	AEG BEST
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.09	25	\$0.02	12%	100%	\$24.68	0.08	0.08	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.06	15	\$0.05	2%	100%	\$24.73	0.01	0.01	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.19	15	\$0.05	2%	100%	\$24.73	0.02	0.02	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.24	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.24	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	45.25	20	\$26.61	100%	100%	\$63.47	0.65	0.65	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	0.71	8	\$0.00	100%	100%	(\$0.29)	0.08	0.07	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	16.27	15	\$0.00	100%	100%	(\$0.13)	3.17	2.98	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	0.56	17	\$0.00	100%	100%	\$0.23	0.16	0.16	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	2.04	8	\$0.00	100%	100%	(\$0.21)	0.01	0.01	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	43.62	15	\$0.05	100%	100%	(\$0.19)	0.76	0.73	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	3.89	17	\$0.01	100%	100%	\$0.13	0.04	0.04	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.52	20	\$0.27	3%	100%	\$12.78	0.17	0.17	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.19	25	\$0.96	3%	100%	\$63.49	0.22	0.22	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	0.52	25	\$0.13	12%	100%	\$28.12	0.13	0.13	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$0.29	2%	100%	\$27.46	0.01	0.01	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.07	15	\$0.29	2%	100%	\$27.46	0.04	0.04	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	283.67	20	\$166.32	100%	100%	\$63.27	1.20	1.20	AEG-BEST
Wastewater	Interior Lighting	General Service Lighting	lamps	Existing	4.41	8	\$0.00	100%	100%	(\$0.24)	0.23	0.27	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	Existing	101.69	15	\$0.00	100%	100%	(\$0.11)	7.75	7.17	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	3.51	17	\$0.02	100%	100%	\$0.19	0.49	0.47	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	Existing	12.75	8	\$0.00	100%	100%	(\$0.17)	0.03	0.03	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	272.65	15	\$0.26	100%	100%	(\$0.16)	1.78	1.69	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	24.30	17	\$0.07	100%	100%	\$0.11	0.11	0.11	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.60	20	\$0.27	3%	100%	\$12.39	0.11	0.11	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.42	25	\$0.96	3%	100%	\$60.86	0.14	0.14	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	New	0.59	25	\$0.13	12%	100%	\$24.68	0.09	0.09	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.38	15	\$0.29	2%	100%	\$24.73	0.01	0.01	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.18	15	\$0.29	2%	100%	\$24.73	0.03	0.03	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	282.80	20	\$166.32	100%	100%	\$63.47	0.79	0.79	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	General Service Lighting	lamps	New	4.41	8	\$0.00	100%	100%	(\$0.24)	0.12	0.11	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	New	101.69	15	\$0.00	100%	100%	(\$0.11)	4.95	4.65	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	New	3.51	17	\$0.02	100%	100%	\$0.19	0.26	0.24	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	New	12.75	8	\$0.00	100%	100%	(\$0.17)	0.01	0.01	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Area Lighting	lamps	New	272.65	15	\$0.26	100%	100%	(\$0.16)	1.19	1.14	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	24.30	17	\$0.07	100%	100%	\$0.11	0.06	0.06	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.52	20	\$0.27	3%	100%	\$12.78	0.27	0.27	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.19	25	\$0.96	3%	100%	\$63.49	0.35	0.35	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	Existing	0.52	25	\$0.13	12%	100%	\$28.12	0.20	0.20	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$0.29	2%	100%	\$27.46	0.02	0.02	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.07	15	\$0.29	2%	100%	\$27.46	0.06	0.06	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	283.67	20	\$166.32	100%	100%	\$63.27	1.89	1.89	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	Existing	4.41	8	\$0.00	100%	100%	(\$0.56)	0.37	0.42	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	Existing	101.69	15	\$0.01	100%	100%	(\$0.26)	12.21	11.30	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	Existing	3.51	17	\$0.04	100%	100%	\$0.44	0.77	0.74	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	Existing	12.75	8	\$0.00	100%	100%	(\$0.40)	0.05	0.04	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	Existing	272.65	15	\$0.60	100%	100%	(\$0.38)	2.80	2.66	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	Existing	24.30	17	\$0.16	100%	100%	\$0.25	0.18	0.17	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.60	20	\$0.27	3%	100%	\$12.39	0.17	0.17	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.42	25	\$0.96	3%	100%	\$60.86	0.22	0.22	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	New	0.59	25	\$0.13	12%	100%	\$24.68	0.14	0.14	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.38	15	\$0.29	2%	100%	\$24.73	0.01	0.01	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.18	15	\$0.29	2%	100%	\$24.73	0.04	0.04	AEG BEST
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	282.80	20	\$166.32	100%	100%	\$63.47	1.25	1.25	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	New	4.41	8	\$0.00	100%	100%	(\$0.56)	0.19	0.17	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	New	101.69	15	\$0.01	100%	100%	(\$0.26)	7.80	7.33	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	New	3.51	17	\$0.04	100%	100%	\$0.44	0.40	0.39	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	New	12.75	8	\$0.00	100%	100%	(\$0.40)	0.02	0.02	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	New	272.65	15	\$0.60	100%	100%	(\$0.38)	1.87	1.79	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	New	24.30	17	\$0.16	100%	100%	\$0.25	0.09	0.09	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.02	20	\$0.22	3%	100%	\$12.78	0.01	0.01	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.55	25	\$0.77	3%	100%	\$63.49	0.02	0.02	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.42	25	\$0.10	12%	100%	\$28.12	0.01	0.01	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.27	15	\$0.23	2%	100%	\$27.46	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.85	15	\$0.23	2%	100%	\$27.46	0.00	0.00	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$63.27	0.10	0.10	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.42)	0.01	0.02	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.19)	0.45	0.41	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.81	17	\$0.02	100%	100%	\$0.33	0.03	0.03	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.30)	0.00	0.00	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.36	100%	100%	(\$0.28)	0.10	0.10	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.44	17	\$0.09	100%	100%	\$0.19	0.01	0.01	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.08	20	\$0.22	3%	100%	\$12.39	0.01	0.01	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.73	25	\$0.77	3%	100%	\$60.86	0.01	0.01	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	12%	100%	\$24.68	0.01	0.01	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.73	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.94	15	\$0.23	2%	100%	\$24.73	0.00	0.00	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$63.47	0.07	0.07	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.42)	0.01	0.01	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.19)	0.29	0.27	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	2.81	17	\$0.02	100%	100%	\$0.33	0.01	0.01	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.30)	0.00	0.00	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.36	100%	100%	(\$0.28)	0.07	0.07	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.44	17	\$0.09	100%	100%	\$0.19	0.00	0.00	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.02	20	\$0.22	3%	100%	\$12.78	1.04	1.04	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.55	25	\$0.77	3%	100%	\$63.49	1.36	1.36	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.42	25	\$0.10	12%	100%	\$28.12	0.78	0.78	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.27	15	\$0.23	2%	100%	\$27.46	0.07	0.07	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.85	15	\$0.23	2%	100%	\$27.46	0.23	0.23	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$63.27	7.41	7.41	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.08)	0.63	0.73	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.04)	21.12	19.54	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.81	17	\$0.00	100%	100%	\$0.06	1.34	1.27	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.06)	0.08	0.08	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.07	100%	100%	(\$0.05)	4.85	4.60	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.44	17	\$0.02	100%	100%	\$0.03	0.31	0.30	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.08	20	\$0.22	3%	100%	\$12.39	0.65	0.65	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.73	25	\$0.77	3%	100%	\$60.86	0.87	0.87	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	12%	100%	\$24.68	0.57	0.57	AEG BEST
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.73	0.06	0.06	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.94	15	\$0.23	2%	100%	\$24.73	0.17	0.17	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$63.47	4.87	4.87	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.08)	0.32	0.29	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.04)	13.48	12.67	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	2.81	17	\$0.00	100%	100%	\$0.06	0.70	0.67	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.06)	0.04	0.03	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.07	100%	100%	(\$0.05)	3.23	3.10	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.44	17	\$0.02	100%	100%	\$0.03	0.16	0.16	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.01	20	\$0.11	3%	100%	\$12.78	0.16	0.16	AEG BEST
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.28	25	\$0.38	3%	100%	\$63.49	0.21	0.21	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	0.21	25	\$0.05	12%	100%	\$28.12	0.12	0.12	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$27.46	0.01	0.01	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.12	2%	100%	\$27.46	0.03	0.03	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$63.27	1.12	1.12	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.66)	0.14	0.17	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.30)	4.79	4.43	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	1.40	17	\$0.02	100%	100%	\$0.52	0.30	0.29	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.47)	0.02	0.02	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.28	100%	100%	(\$0.44)	1.10	1.04	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	9.72	17	\$0.07	100%	100%	\$0.29	0.07	0.07	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.04	20	\$0.11	3%	100%	\$12.39	0.10	0.10	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.37	25	\$0.38	3%	100%	\$60.86	0.13	0.13	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	0.24	25	\$0.05	12%	100%	\$24.68	0.09	0.09	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$24.73	0.01	0.01	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.12	2%	100%	\$24.73	0.03	0.03	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$63.47	0.74	0.74	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.66)	0.07	0.07	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.30)	3.06	2.87	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	1.40	17	\$0.02	100%	100%	\$0.52	0.16	0.15	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.47)	0.01	0.01	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.28	100%	100%	(\$0.44)	0.73	0.70	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	9.72	17	\$0.07	100%	100%	\$0.29	0.04	0.04	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.02	20	\$0.22	3%	100%	\$12.78	1.37	1.37	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.55	25	\$0.77	3%	100%	\$63.49	1.80	1.80	AEG BEST
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	0.42	25	\$0.10	12%	100%	\$28.12	1.03	1.03	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.27	15	\$0.23	2%	100%	\$27.46	0.10	0.10	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.85	15	\$0.23	2%	100%	\$27.46	0.30	0.30	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$63.27	9.78	9.78	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.15)	2.97	3.44	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.07)	99.05	91.65	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	2.81	17	\$0.01	100%	100%	\$0.12	6.26	5.98	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.11)	0.37	0.35	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.13	100%	100%	(\$0.10)	22.75	21.58	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	19.44	17	\$0.03	100%	100%	\$0.07	1.44	1.39	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.08	20	\$0.22	3%	100%	\$12.39	0.86	0.86	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.73	25	\$0.77	3%	100%	\$60.86	1.14	1.14	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	12%	100%	\$24.68	0.75	0.75	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.73	0.07	0.07	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.94	15	\$0.23	2%	100%	\$24.73	0.23	0.23	AEG BEST
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$63.47	6.43	6.43	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.15)	1.51	1.37	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.07)	63.24	59.42	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	2.81	17	\$0.01	100%	100%	\$0.12	3.26	3.13	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.11)	0.17	0.14	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.13	100%	100%	(\$0.10)	15.15	14.54	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	19.44	17	\$0.03	100%	100%	\$0.07	0.76	0.74	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.01	20	\$0.11	3%	100%	\$12.78	0.06	0.06	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.28	25	\$0.38	3%	100%	\$63.49	0.08	0.08	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.21	25	\$0.05	12%	100%	\$28.12	0.04	0.04	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$27.46	0.00	0.00	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.12	2%	100%	\$27.46	0.01	0.01	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$63.27	0.42	0.42	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$2.03)	0.08	0.09	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.01	100%	100%	(\$0.93)	2.63	2.43	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.40	17	\$0.06	100%	100%	\$1.60	0.17	0.16	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$1.45)	0.01	0.01	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.87	100%	100%	(\$1.36)	0.60	0.57	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	9.72	17	\$0.22	100%	100%	\$0.89	0.04	0.04	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.04	20	\$0.11	3%	100%	\$12.39	0.04	0.04	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.37	25	\$0.38	3%	100%	\$60.86	0.05	0.05	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	0.24	25	\$0.05	12%	100%	\$24.68	0.03	0.03	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$24.73	0.00	0.00	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.12	2%	100%	\$24.73	0.01	0.01	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$63.47	0.27	0.27	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$2.03)	0.04	0.04	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.01	100%	100%	(\$0.93)	1.68	1.57	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	1.40	17	\$0.06	100%	100%	\$1.60	0.09	0.08	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$1.45)	0.00	0.00	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.87	100%	100%	(\$1.36)	0.40	0.39	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	9.72	17	\$0.22	100%	100%	\$0.89	0.02	0.02	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.02	20	\$0.22	3%	100%	\$12.78	0.43	0.43	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.55	25	\$0.77	3%	100%	\$63.49	0.56	0.56	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.42	25	\$0.10	12%	100%	\$28.12	0.32	0.32	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.27	15	\$0.23	2%	100%	\$27.46	0.03	0.03	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.85	15	\$0.23	2%	100%	\$27.46	0.10	0.10	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$63.27	3.07	3.07	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.63)	0.42	0.49	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.29)	14.05	13.00	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.81	17	\$0.04	100%	100%	\$0.49	0.89	0.85	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.45)	0.05	0.05	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.54	100%	100%	(\$0.42)	3.23	3.06	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.44	17	\$0.14	100%	100%	\$0.28	0.20	0.20	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.08	20	\$0.22	3%	100%	\$12.39	13.19	13.19	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.73	25	\$0.77	3%	100%	\$59.85	15.51	15.51	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	12%	100%	\$24.68	12.35	12.35	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.73	1.02	1.02	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.94	15	\$0.23	2%	100%	\$24.73	3.16	3.16	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$63.47	67.16	67.16	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.63)	20.04	16.88	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.29)	647.56	554.98	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	2.81	17	\$0.04	100%	100%	\$0.49	31.19	25.56	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.45)	2.88	2.36	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.54	100%	100%	(\$0.42)	131.26	117.50	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.44	17	\$0.14	100%	100%	\$0.28	6.05	5.05	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.76	0.78	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	2.93	2.93	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.60	0.61	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.30	0.30	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.12	0.12	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.03	0.03	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.01	0.01	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	1.95	1.96	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.40	0.41	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.10	0.10	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.27	0.28	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.06	0.06	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.23	0.23	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	1.90	1.94	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.92	0.94	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.16	0.17	CHLR_VSPMP-Cooling-SCE-17_R0-86

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.73	0.76	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.02	5	\$0.40	18%	30%	\$4,394.62	0.89	0.92	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.20	0.20	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	3.62	3.73	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	26.93	27.00	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.42	0.43	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	1.62	1.65	STAT_WIFI-All-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	6.23	6.24	STAT_WIFI-All-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	1.28	1.30	STAT_WIFI-All-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.04	15	\$0.36	3%	17%	\$1,189.40	7.78	8.46	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.06	15	\$0.60	3%	17%	\$1,401.79	11.52	12.29	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.08	0.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	2.18	2.84	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	2.23	2.91	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	3.73	4.07	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	5.45	5.93	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	3.72	4.05	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	4,302.79	20	\$1,479.32	15%	20%	\$40.46	34.51	34.51	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	29.88	15	\$29.94	20%	50%	\$131.99	21.10	21.10	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	47.81	15	\$20.95	20%	50%	\$57.74	33.76	33.76	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	17.74	10	\$2.60	9%	38%	\$55.26	12.00	12.00	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	13.30	12	\$3.96	9%	38%	(\$20.41)	8.77	8.77	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	13.30	10	\$4.13	9%	38%	\$49.25	8.77	8.77	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	60.77	10	\$6.11	9%	38%	\$47.96	41.11	41.11	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	71.82	10	\$10.11	9%	38%	\$19.12	47.32	47.32	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	110.49	10	\$50.96	9%	38%	\$73.14	72.80	72.80	FAN_VSD-Motors-UN-v1.0-5
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	41.06	10	\$3.08	17%	50%	\$38.58	32.40	32.40	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	2.38	2.38	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.16	0.16	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	46.92	10	\$5.08	9%	15%	\$17.16	6.51	6.51	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	9.38	10	\$2.20	9%	38%	\$6.29	6.18	6.18	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	23.46	10	\$2.22	18%	75%	\$41.65	31.74	31.74	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	17.60	15	\$13.54	26%	45%	\$101.34	7.73	7.73	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.59	10	\$0.21	17%	50%	\$56.20	0.46	0.46	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	3.52	10	\$0.68	17%	50%	\$30.50	2.78	2.78	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	7.86	7.86	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	3.52	15	\$1.86	17%	50%	\$69.67	2.78	2.78	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	Existing	32.84	6	\$5.08	26%	45%	\$33.51	14.43	14.43	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	127.15	10	\$44.74	25%	45%	\$55.80	58.79	58.79	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	3.23	10	\$1.37	10%	50%	\$66.96	11.96	11.96	MTR_GRWND<100HP-Motors-7PLN-v5-17
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.80	10	\$0.48	6%	25%	\$42.78	3.16	3.16	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	26.95	12	\$6.00	16%	25%	\$32.57	23.68	23.68	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	7.19	10	\$1.80	16%	36%	\$39.79	13.61	13.61	DRV_SYNBELT-Motors-7PLN-v5-1

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Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,830.26	10	\$227.62	8%	17%	\$19.72	26.42	26.42	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	Existing	2,678.00	15	\$615.23	8%	17%	\$30.26	38.66	38.66	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	268.67	10	\$604.92	15%	17%	\$357.04	0.62	0.62	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	865.72	1	\$54.66	15%	17%	\$59.83	2.78	2.78	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	335.61	2	\$14.74	15%	17%	\$22.32	1.08	1.08	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	199.19	15	\$95.26	15%	15%	\$63.00	1.84	1.84	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	5.17	15	\$0.67	15%	30%	\$17.08	3.40	3.40	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	4.89	15	\$0.63	8%	16%	\$17.02	1.24	1.24	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	Existing	7.50	10	\$75.00	15%	15%	\$1,585.81	0.49	0.49	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	3.05	15	\$0.02	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	59.05	15	\$5.64	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	35.85	15	\$6.81	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	35.85	15	\$21.39	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.38	15	\$0.08	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.76	15	\$0.40	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.76	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	190.11	10	\$44.72	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	196.90	10	\$3.35	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	106.53	10	\$11.54	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	40.10	10	\$20.70	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	32.12	10	\$6.82	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	32.12	10	\$2.80	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	339.49	10	\$33.37	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	0.36	5	\$0.05	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	3.03	1	\$0.13	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	3.84	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	16.62	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	0.57	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.62	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.61	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	21.56	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	Existing	16.06	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	2.65	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	Existing	11.09	3	\$363.11	3%	11%	\$701.40	0.09	0.09	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	Existing	48.00	3	\$363.11	3%	11%	\$701.40	0.34	0.34	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	1.66	3	\$363.11	3%	11%	\$701.40	0.07	0.07	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	7.57	3	\$363.11	3%	11%	\$701.40	0.27	0.29	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	1.76	3	\$363.11	3%	11%	\$701.40	0.07	0.07	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	Existing	62.29	3	\$363.11	3%	11%	\$701.40	2.73	2.73	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	Existing	46.40	3	\$363.11	3%	11%	\$701.40	2.03	2.03	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	7.66	3	\$363.11	3%	11%	\$701.40	0.58	0.45	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	Existing	8.73	3	\$65.02	0%	0%	\$160.43	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Exterior Lighting	Commissioning	employee	Existing	2.03	3	\$65.02	0%	0%	\$160.43	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	Existing	71.87	3	\$65.02	0%	0%	\$160.43	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	Existing	53.54	3	\$65.02	0%	0%	\$160.43	0.00	0.00	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	Existing	8.84	3	\$65.02	0%	0%	\$160.43	0.00	0.00	IND_SEM-Lighting-AEG-1

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Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	8.73	3	\$41.28	5%	39%	\$101.84	5.29	5.77	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	2.03	3	\$41.28	5%	39%	\$101.84	1.33	1.41	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	Existing	71.87	3	\$41.28	5%	39%	\$101.84	53.52	53.52	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	Existing	53.54	3	\$41.28	5%	39%	\$101.84	39.86	39.86	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	8.84	3	\$41.28	5%	39%	\$101.84	11.35	8.82	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	2.40	12	\$1.31	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	39.91	11	\$31.10	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.38	0.38	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	1.34	1.34	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.28	0.28	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.15	0.15	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.06	0.06	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.01	0.01	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.89	0.89	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.19	0.19	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.05	0.05	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.12	0.12	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.02	0.02	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.06	0.06	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.64	0.64	AEG-BEST

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Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.31	0.31	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.06	0.06	CHLR_VSPMP-Cooling-SCE-17_R0-86
Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.21	0.21	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.02	5	\$0.40	18%	30%	\$4,068.48	0.15	0.15	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.07	0.07	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	1.30	1.31	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	8.86	8.86	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.05	0.05	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.23	0.23	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.81	0.81	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.17	0.17	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.04	15	\$0.36	22%	41%	\$1,316.43	9.05	9.15	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.05	15	\$0.60	22%	41%	\$1,551.50	12.67	12.80	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.87	0.95	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	1.02	1.11	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.94	0.97	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.74	0.77	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.78	0.80	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	New	4,302.79	20	\$1,479.32	15%	20%	\$40.46	12.65	12.65	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	29.88	15	\$29.94	20%	50%	\$131.99	6.84	6.84	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	New	47.81	15	\$20.95	20%	50%	\$57.74	10.94	10.94	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	17.74	10	\$2.60	9%	38%	\$55.26	3.28	3.28	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	New	13.30	12	\$3.96	9%	38%	(\$20.41)	3.09	3.09	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	13.30	10	\$4.13	9%	38%	\$49.25	2.85	2.85	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	60.77	10	\$6.11	9%	38%	\$47.96	11.23	11.23	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	New	71.82	10	\$10.11	9%	38%	\$19.12	15.39	15.39	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	110.49	10	\$50.96	9%	38%	\$73.14	23.67	23.67	FAN_VSD-Motors-UN-v1.0-5

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Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	41.06	10	\$3.08	17%	50%	\$38.58	8.85	8.85	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.88	0.88	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.04	0.04	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	46.92	10	\$5.08	9%	15%	\$17.16	2.12	2.12	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	New	9.38	10	\$2.20	9%	38%	\$6.29	2.01	2.01	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	23.46	10	\$2.22	18%	75%	\$41.65	8.67	8.67	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	17.60	15	\$13.54	26%	45%	\$101.34	2.88	2.88	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.59	10	\$0.21	17%	50%	\$56.20	0.13	0.13	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	3.52	10	\$0.68	17%	50%	\$30.50	0.76	0.76	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	2.59	2.59	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	3.52	15	\$1.86	17%	50%	\$69.67	0.90	0.90	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	New	32.84	6	\$5.08	26%	45%	\$33.51	3.38	3.38	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	127.15	10	\$44.74	25%	45%	\$55.80	19.12	19.12	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	3.23	10	\$1.37	10%	50%	\$66.96	3.89	3.89	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.80	10	\$0.48	6%	25%	\$42.78	1.03	1.03	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	26.95	12	\$6.00	16%	25%	\$32.57	8.35	8.35	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	7.19	10	\$1.80	16%	36%	\$39.79	3.72	3.72	DRV_SYNBELT-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	New	1,830.26	10	\$227.62	8%	17%	\$19.72	8.42	8.42	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	New	2,678.00	15	\$615.23	8%	17%	\$30.26	14.09	14.09	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	268.67	10	\$604.92	15%	17%	\$357.04	0.20	0.20	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	865.72	1	\$54.66	15%	17%	\$59.83	1.02	1.02	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	335.61	2	\$14.74	15%	17%	\$22.32	0.07	0.07	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	New	199.19	15	\$95.26	15%	15%	\$63.00	0.69	0.69	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.17	15	\$0.67	15%	30%	\$17.08	1.24	1.24	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	4.89	15	\$0.63	8%	16%	\$17.02	0.46	0.46	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	New	7.50	10	\$75.00	15%	15%	\$1,585.81	0.16	0.16	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	3.05	15	\$0.02	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	59.05	15	\$5.64	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	35.85	15	\$6.81	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	35.85	15	\$21.39	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.38	15	\$0.08	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.76	15	\$0.40	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.76	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	New	190.11	10	\$44.72	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	196.90	10	\$3.35	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	New	106.53	10	\$11.54	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	New	40.10	10	\$20.70	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	32.12	10	\$6.82	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	32.12	10	\$2.80	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	339.49	10	\$33.37	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	New	0.36	5	\$0.05	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.03	1	\$0.13	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	New	4.11	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Heating	Transformer - High Efficiency	employee	New	16.69	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	0.57	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	2.14	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	0.55	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	New	21.56	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	New	16.06	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	2.61	10	\$7.51	15%	15%	\$18.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	New	11.87	3	\$363.11	3%	11%	\$701.35	0.01	0.01	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	New	48.21	3	\$363.11	3%	11%	\$701.35	0.02	0.02	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	New	1.64	3	\$363.11	3%	11%	\$701.35	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	6.19	3	\$363.11	3%	11%	\$701.35	0.02	0.02	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	1.58	3	\$363.11	3%	11%	\$701.35	0.00	0.00	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	New	62.29	3	\$363.11	3%	11%	\$701.35	0.17	0.17	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	New	46.40	3	\$363.11	3%	11%	\$701.35	0.13	0.13	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	7.53	3	\$363.11	3%	11%	\$701.35	0.03	0.02	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	New	7.14	3	\$65.02	5%	39%	\$162.02	0.51	0.52	IND_SEM-HVAC-AEG-1

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Agriculture	Exterior Lighting	Commissioning	employee	New	1.82	3	\$65.02	5%	39%	\$162.02	0.13	0.13	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	New	71.87	3	\$65.02	5%	39%	\$162.02	7.09	7.09	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	New	53.54	3	\$65.02	5%	39%	\$162.02	6.60	6.60	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	New	8.68	3	\$65.02	5%	39%	\$162.02	0.67	0.55	IND_SEM-Lighting-AEG-1
Agriculture	Interior Lighting	Retrocommissioning	employee	New	7.14	3	\$41.28	0%	0%	\$102.85	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	1.82	3	\$41.28	0%	0%	\$102.85	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	New	71.87	3	\$41.28	0%	0%	\$102.85	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	New	53.54	3	\$41.28	0%	0%	\$102.85	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	New	8.68	3	\$41.28	0%	0%	\$102.85	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	New	2.40	12	\$1.31	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	39.91	11	\$31.10	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.02	0.02	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.09	0.09	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.02	0.02	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.01	0.01	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Mining	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.06	0.06	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.01	0.01	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool

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Mining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.01	0.01	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.01	0.01	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.06	0.06	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.03	0.03	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.00	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.02	0.02	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	Existing	0.13	5	\$0.40	18%	30%	\$778.48	0.03	0.03	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.11	0.11	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	0.82	0.82	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.05	0.05	STAT_WIFI-AII-7PLN-v2-1
Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.19	0.19	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.04	0.04	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.36	7%	33%	\$210.69	0.72	0.77	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.35	15	\$0.60	7%	33%	\$248.32	1.00	1.07	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.10	0.13	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.10	0.13	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.17	0.19	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.25	0.27	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.17	0.19	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	6,162.86	20	\$2,118.82	15%	20%	\$40.46	0.51	0.51	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$33.69	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Mining	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$23.58	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	Existing	3,066.99	10	\$449.69	9%	38%	\$55.26	10.74	10.74	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	Existing	2,300.25	12	\$685.32	9%	38%	(\$20.41)	7.84	7.84	PUMP_SYSOPT-Motors-UN-v1.0-5

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Mining	Motors	Pumping System - Variable Speed Drive	employee	Existing	2,300.25	10	\$714.31	9%	38%	\$49.25	7.84	7.84	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	Existing	468.57	10	\$47.11	9%	38%	\$47.96	1.64	1.64	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	Existing	553.76	10	\$77.95	9%	38%	\$19.12	1.89	1.89	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	Existing	851.94	10	\$392.94	9%	38%	\$73.14	2.90	2.90	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	2,236.35	10	\$167.88	17%	50%	\$38.58	9.13	9.13	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.67	0.67	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.05	0.05	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	2,555.83	10	\$276.51	9%	15%	\$17.16	1.83	1.83	E3T
Mining	Motors	Compressed Air - System Controls	employee	Existing	511.17	10	\$120.04	9%	38%	\$6.29	1.74	1.74	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	Existing	1,277.91	10	\$120.67	18%	75%	\$41.65	8.95	8.95	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	958.44	15	\$737.30	26%	45%	\$101.34	2.18	2.18	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	31.95	10	\$11.32	17%	50%	\$56.20	0.13	0.13	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	191.69	10	\$36.86	17%	50%	\$30.50	0.78	0.78	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	2.22	2.22	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	191.69	15	\$101.38	17%	50%	\$69.67	0.78	0.78	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Mining	Motors	Compressed Air - End Use Optimization	employee	Existing	1,789.08	6	\$276.84	26%	45%	\$33.51	4.07	4.07	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	Existing	837.62	10	\$294.75	25%	45%	\$55.80	2.00	2.00	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	76.67	10	\$32.38	10%	50%	\$66.96	1.83	1.83	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	42.60	10	\$11.49	6%	25%	\$42.78	0.48	0.48	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	638.96	12	\$142.12	16%	25%	\$32.57	3.63	3.63	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	Existing	170.39	10	\$42.76	16%	36%	\$39.79	2.09	2.09	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	2,621.47	10	\$326.02	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	3,835.69	15	\$881.19	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	23,227.15	10	\$604.92	0%	0%	\$4.13	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,239.97	1	\$54.66	0%	0%	\$41.77	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	480.69	2	\$14.74	0%	0%	\$15.58	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Mining	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$107.22	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	750.96	15	\$97.00	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Mining	Motors	Automatic Milker Takeoffs	Cows	Existing	1,296.76	10	\$12,967.63	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	Existing	179.36	15	\$1.36	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$6.35	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$7.66	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$24.07	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	22.42	15	\$4.91	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	44.84	15	\$23.68	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	44.84	15	\$0.47	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	Existing	1,252.36	10	\$294.57	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,297.08	10	\$22.06	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	Existing	201.78	10	\$21.85	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Mining	Process	Paper: Premium Control Large Material	employee	Existing	209.93	10	\$108.35	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	Existing	168.15	10	\$35.69	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	Existing	168.15	10	\$14.63	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Mining	Motors	Kraft: Efficient Agitator	employee	Existing	2,236.35	10	\$219.82	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	Existing	1.88	5	\$0.25	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	19.96	1	\$0.84	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	Existing	22.52	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	Existing	97.48	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	Existing	3.37	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	Existing	23.40	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	5.44	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	Existing	638.96	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	Existing	50.44	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	Existing	7.59	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	Existing	65.06	3	\$4,790.50	3%	11%	\$709.38	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	Existing	281.60	3	\$4,790.50	3%	11%	\$709.38	0.01	0.01	IND_SEM-HVAC-AEG-1
Mining	Ventilation	Strategic Energy Management	employee	Existing	9.73	3	\$4,790.50	3%	11%	\$709.38	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	Existing	67.60	3	\$4,790.50	3%	11%	\$709.38	0.01	0.01	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	Existing	15.72	3	\$4,790.50	3%	11%	\$709.38	0.00	0.00	IND_SEM-Lighting-AEG-1

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Mining	Motors	Strategic Energy Management	employee	Existing	1,845.87	3	\$4,790.50	3%	11%	\$709.38	0.42	0.42	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	Existing	145.73	3	\$4,790.50	3%	11%	\$709.38	0.03	0.03	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	Existing	21.94	3	\$4,790.50	3%	11%	\$709.38	0.01	0.01	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	Existing	78.00	3	\$1,140.96	0%	0%	\$171.18	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	Existing	18.14	3	\$1,140.96	0%	0%	\$171.18	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	Existing	2,129.86	3	\$1,140.96	0%	0%	\$171.18	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	Existing	168.15	3	\$1,140.96	0%	0%	\$171.18	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	Existing	25.32	3	\$1,140.96	0%	0%	\$171.18	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	Existing	78.00	3	\$724.30	10%	40%	\$108.67	0.22	0.24	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	Existing	18.14	3	\$724.30	10%	40%	\$108.67	0.05	0.06	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	Existing	2,129.86	3	\$724.30	10%	40%	\$108.67	7.24	7.24	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	Existing	168.15	3	\$724.30	10%	40%	\$108.67	0.57	0.57	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	Existing	25.32	3	\$724.30	10%	40%	\$108.67	0.15	0.12	IND_RCX-Process-AEG-1
Mining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	414.35	12	\$226.07	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	6,900.74	11	\$5,377.15	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Mining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.01	0.01	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.04	0.04	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.01	0.01	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool

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Mining	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.03	0.03	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.01	0.01	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Mining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.02	0.02	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.01	0.01	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.01	0.01	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	New	0.14	5	\$0.40	18%	30%	\$720.71	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.04	0.04	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.27	0.27	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-All-7PLN-v2-1

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Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.02	0.02	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.21	15	\$0.36	22%	41%	\$233.20	0.45	0.45	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.29	15	\$0.60	22%	41%	\$274.84	0.62	0.63	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.04	0.04	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.05	0.05	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.04	0.04	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.03	0.04	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.04	0.04	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	6,162.86	20	\$2,118.82	15%	20%	\$40.46	0.19	0.19	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$33.69	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Mining	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$23.58	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	New	3,066.99	10	\$449.69	9%	38%	\$55.26	2.93	2.93	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	New	2,300.25	12	\$685.32	9%	38%	(\$20.41)	2.76	2.76	PUMP_SYSOPT-Motors-UN-v1.0-5
Mining	Motors	Pumping System - Variable Speed Drive	employee	New	2,300.25	10	\$714.31	9%	38%	\$49.25	2.55	2.55	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	New	468.57	10	\$47.11	9%	38%	\$47.96	0.45	0.45	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	New	553.76	10	\$77.95	9%	38%	\$19.12	0.61	0.61	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	New	851.94	10	\$392.94	9%	38%	\$73.14	0.94	0.94	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	New	2,236.35	10	\$167.88	17%	50%	\$38.58	2.49	2.49	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.25	0.25	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	2,555.83	10	\$276.51	9%	15%	\$17.16	0.60	0.60	E3T
Mining	Motors	Compressed Air - System Controls	employee	New	511.17	10	\$120.04	9%	38%	\$6.29	0.57	0.57	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	New	1,277.91	10	\$120.67	18%	75%	\$41.65	2.44	2.44	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	New	958.44	15	\$737.30	26%	45%	\$101.34	0.81	0.81	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	31.95	10	\$11.32	17%	50%	\$56.20	0.04	0.04	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	191.69	10	\$36.86	17%	50%	\$30.50	0.21	0.21	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.73	0.73	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	191.69	15	\$101.38	17%	50%	\$69.67	0.25	0.25	CMPAIR_STORAGE-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - End Use Optimization	employee	New	1,789.08	6	\$276.84	26%	45%	\$33.51	0.95	0.95	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	New	837.62	10	\$294.75	25%	45%	\$55.80	0.65	0.65	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	New	76.67	10	\$32.38	10%	50%	\$66.96	0.60	0.60	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	New	42.60	10	\$11.49	6%	25%	\$42.78	0.16	0.16	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	New	638.96	12	\$142.12	16%	25%	\$32.57	1.28	1.28	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	New	170.39	10	\$42.76	16%	36%	\$39.79	0.57	0.57	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	New	2,621.47	10	\$326.02	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	New	3,835.69	15	\$881.19	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	23,227.15	10	\$604.92	0%	0%	\$4.13	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,239.97	1	\$54.66	0%	0%	\$41.77	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	480.69	2	\$14.74	0%	0%	\$15.58	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Mining	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$107.22	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	750.96	15	\$97.00	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Mining	Motors	Automatic Milker Takeoffs	Cows	New	1,296.76	10	\$12,967.63	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	New	179.36	15	\$1.36	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$6.35	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$7.66	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$24.07	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	22.42	15	\$4.91	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	44.84	15	\$23.68	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	44.84	15	\$0.47	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	New	1,252.36	10	\$294.57	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,297.08	10	\$22.06	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	New	201.78	10	\$21.85	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Mining	Process	Paper: Premium Control Large Material	employee	New	209.93	10	\$108.35	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	New	168.15	10	\$35.69	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	New	168.15	10	\$14.63	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Mining	Motors	Kraft: Efficient Agitator	employee	New	2,236.35	10	\$219.82	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	New	1.88	5	\$0.25	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	19.96	1	\$0.84	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	New	24.10	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	New	97.90	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	New	3.34	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	New	19.14	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	New	4.89	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	New	638.96	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	New	50.44	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	New	7.46	10	\$99.08	15%	15%	\$18.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	New	69.61	3	\$4,790.50	3%	11%	\$709.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	New	282.83	3	\$4,790.50	3%	11%	\$709.50	0.00	0.00	IND_SEM-HVAC-AEG-1

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Mining	Ventilation	Strategic Energy Management	employee	New	9.64	3	\$4,790.50	3%	11%	\$709.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	New	55.30	3	\$4,790.50	3%	11%	\$709.50	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	New	14.12	3	\$4,790.50	3%	11%	\$709.50	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Motors	Strategic Energy Management	employee	New	1,845.87	3	\$4,790.50	3%	11%	\$709.50	0.03	0.03	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	New	145.73	3	\$4,790.50	3%	11%	\$709.50	0.00	0.00	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	New	21.56	3	\$4,790.50	3%	11%	\$709.50	0.00	0.00	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	New	63.81	3	\$1,140.96	10%	40%	\$171.82	0.02	0.02	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	New	16.29	3	\$1,140.96	10%	40%	\$171.82	0.01	0.01	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	New	2,129.86	3	\$1,140.96	10%	40%	\$171.82	1.16	1.16	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	New	168.15	3	\$1,140.96	10%	40%	\$171.82	0.05	0.05	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	New	24.88	3	\$1,140.96	10%	40%	\$171.82	0.01	0.01	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	New	63.81	3	\$724.30	0%	0%	\$109.07	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	New	16.29	3	\$724.30	0%	0%	\$109.07	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	New	2,129.86	3	\$724.30	0%	0%	\$109.07	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	New	168.15	3	\$724.30	0%	0%	\$109.07	0.00	0.00	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	New	24.88	3	\$724.30	0%	0%	\$109.07	0.00	0.00	IND_RCX-Process-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Motors	Municipal Sewage Treatment - Optimization	employee	New	414.35	12	\$226.07	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	6,900.74	11	\$5,377.15	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Mining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.65	0.66	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	2.49	2.49	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.51	0.52	Building Energy Simulation Tool

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Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.25	0.26	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.11	0.11	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.02	0.02	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.01	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	1.66	1.66	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.34	0.35	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.08	0.08	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.23	0.23	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.05	0.05	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.19	0.20	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	1.61	1.65	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.78	0.80	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.14	0.14	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.62	0.64	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.20	5	\$0.40	18%	30%	\$505.26	0.76	0.78	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.17	0.17	VENT_DCV-Ventilation-7PLN-v5-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	3.07	3.16	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	22.86	22.92	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.36	0.37	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	1.38	1.40	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	5.29	5.30	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	1.09	1.10	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.36	7%	33%	\$136.75	34.40	36.71	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.55	15	\$0.60	7%	33%	\$161.17	48.15	51.39	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.17	0.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	4.57	5.95	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	4.68	6.09	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	7.83	8.53	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	11.42	12.43	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	7.81	8.50	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	57,320.53	20	\$19,707.07	15%	20%	\$40.46	39.65	39.65	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	488.77	15	\$489.71	20%	50%	\$131.99	29.77	29.77	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	782.04	15	\$342.74	20%	50%	\$57.74	47.63	47.63	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	2,286.85	10	\$335.30	9%	38%	\$55.26	133.43	133.43	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	1,715.14	12	\$511.00	9%	38%	(\$20.41)	97.47	97.47	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,715.14	10	\$532.61	9%	38%	\$49.25	97.47	97.47	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	2,091.21	10	\$210.25	9%	38%	\$47.96	122.02	122.02	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	2,471.43	10	\$347.87	9%	38%	\$19.12	140.44	140.44	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	3,802.21	10	\$1,753.71	9%	38%	\$73.14	216.07	216.07	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	2,559.09	10	\$192.11	17%	50%	\$38.58	174.20	174.20	CMPAIR_EQPT-Motors-7PLN-v5-2
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	12.77	12.77	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.86	0.86	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1

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Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	2,924.67	10	\$316.41	9%	15%	\$17.16	34.99	34.99	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	584.93	10	\$137.36	9%	38%	\$6.29	33.24	33.24	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	1,462.34	10	\$138.08	18%	75%	\$41.65	170.65	170.65	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	1,096.75	15	\$843.70	26%	45%	\$101.34	41.55	41.55	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	36.56	10	\$12.96	17%	50%	\$56.20	2.49	2.49	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	219.35	10	\$42.19	17%	50%	\$30.50	14.93	14.93	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	42.26	42.26	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	219.35	15	\$116.01	17%	50%	\$69.67	14.93	14.93	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	2,047.27	6	\$316.80	26%	45%	\$33.51	77.56	77.56	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	6,716.46	10	\$2,363.47	25%	45%	\$55.80	267.84	267.84	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	139.12	10	\$58.75	10%	50%	\$66.96	55.48	55.48	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	77.29	10	\$20.85	6%	25%	\$42.78	14.64	14.64	MTR_GRWND>100HP-Motors-7PLN-v5-25
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,159.35	12	\$257.88	16%	25%	\$32.57	109.80	109.80	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	309.16	10	\$77.58	16%	36%	\$39.79	63.14	63.14	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	24,382.20	10	\$3,032.34	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	35,675.57	15	\$8,195.94	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	34,637.88	10	\$604.92	0%	0%	\$2.77	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	11,532.90	1	\$54.66	0%	0%	\$4.49	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	4,470.85	2	\$14.74	0%	0%	\$1.68	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	3,258.49	15	\$1,558.28	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	4.21	15	\$0.55	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	38.53	15	\$4.98	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	966.91	10	\$9,669.10	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	102.94	15	\$0.78	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	966.00	15	\$92.27	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	586.53	15	\$111.38	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	586.53	15	\$349.86	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	12.87	15	\$2.82	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	25.74	15	\$13.59	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	25.74	15	\$0.27	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	10,042.06	10	\$2,362.05	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	10,400.71	10	\$176.90	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,156.60	10	\$233.55	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	714.76	10	\$368.89	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	572.50	10	\$121.51	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	572.50	10	\$49.82	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	17,932.25	10	\$1,762.63	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	6.41	5	\$0.85	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	160.07	1	\$6.72	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	37.79	10	\$205.94	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	163.57	10	\$205.94	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	5.65	10	\$205.94	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	63.69	10	\$205.94	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	14.81	10	\$205.94	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	1,159.35	10	\$205.94	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	286.25	10	\$205.94	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	35.32	10	\$205.94	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	109.17	3	\$9,956.76	3%	11%	\$706.67	0.55	0.56	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	Existing	472.54	3	\$9,956.76	3%	11%	\$706.67	2.19	2.19	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	16.32	3	\$9,956.76	3%	11%	\$706.67	0.45	0.45	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	183.98	3	\$9,956.76	3%	11%	\$706.67	4.24	4.63	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	42.78	3	\$9,956.76	3%	11%	\$706.67	1.07	1.13	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	Existing	3,349.24	3	\$9,956.76	3%	11%	\$706.67	94.89	94.89	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	Existing	826.94	3	\$9,956.76	3%	11%	\$706.67	23.43	23.43	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	102.03	3	\$9,956.76	3%	11%	\$706.67	4.99	3.87	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	Existing	212.29	3	\$2,422.45	0%	0%	\$168.61	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	49.36	3	\$2,422.45	0%	0%	\$168.61	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	Existing	3,864.52	3	\$2,422.45	0%	0%	\$168.61	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Process	Commissioning	employee	Existing	954.16	3	\$2,422.45	0%	0%	\$168.61	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	Existing	117.73	3	\$2,422.45	0%	0%	\$168.61	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	212.29	3	\$1,537.82	10%	37%	\$107.04	8.81	9.61	IND_RCX-Motors-AEG-1

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Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	49.36	3	\$1,537.82	10%	37%	\$107.04	2.22	2.35	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	Existing	3,864.52	3	\$1,537.82	10%	37%	\$107.04	197.09	197.09	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	Existing	954.16	3	\$1,537.82	10%	37%	\$107.04	48.66	48.66	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	117.73	3	\$1,537.82	10%	37%	\$107.04	10.35	8.05	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	308.95	12	\$168.56	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	5,145.42	11	\$4,009.39	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.32	0.32	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	1.14	1.14	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.24	0.24	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.13	0.13	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.05	0.05	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.01	0.01	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.76	0.76	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.16	0.16	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.04	0.04	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.10	0.10	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.02	0.02	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.06	0.06	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.54	0.54	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.26	0.26	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.05	0.05	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.18	0.18	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.21	5	\$0.40	18%	30%	\$467.76	0.13	0.13	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.06	0.06	VENT_DCV-Ventilation-7PLN-v5-5
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	1.10	1.11	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	7.52	7.52	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.05	0.05	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.20	0.20	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.69	0.69	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.14	0.14	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.32	15	\$0.36	22%	41%	\$151.35	19.05	19.24	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.44	15	\$0.60	22%	41%	\$178.38	26.66	26.94	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.05	0.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	1.82	1.99	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	2.13	2.33	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	1.97	2.03	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	1.56	1.61	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	1.63	1.68	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	57,320.53	20	\$19,707.07	15%	20%	\$40.46	14.53	14.53	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	488.77	15	\$489.71	20%	50%	\$131.99	9.65	9.65	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	New	782.04	15	\$342.74	20%	50%	\$57.74	15.44	15.44	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	2,286.85	10	\$335.30	9%	38%	\$55.26	36.44	36.44	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	New	1,715.14	12	\$511.00	9%	38%	(\$20.41)	34.35	34.35	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	1,715.14	10	\$532.61	9%	38%	\$49.25	31.69	31.69	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	2,091.21	10	\$210.25	9%	38%	\$47.96	33.32	33.32	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	2,471.43	10	\$347.87	9%	38%	\$19.12	45.67	45.67	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	3,802.21	10	\$1,753.71	9%	38%	\$73.14	70.26	70.26	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	2,559.09	10	\$192.11	17%	50%	\$38.58	47.57	47.57	CMPAIR_EQPT-Motors-7PLN-v5-2

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Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	4.76	4.76	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.24	0.24	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	2,924.67	10	\$316.41	9%	15%	\$17.16	11.38	11.38	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	New	584.93	10	\$137.36	9%	38%	\$6.29	10.81	10.81	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	1,462.34	10	\$138.08	18%	75%	\$41.65	46.60	46.60	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	1,096.75	15	\$843.70	26%	45%	\$101.34	15.47	15.47	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	36.56	10	\$12.96	17%	50%	\$56.20	0.68	0.68	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	219.35	10	\$42.19	17%	50%	\$30.50	4.08	4.08	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	13.93	13.93	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	219.35	15	\$116.01	17%	50%	\$69.67	4.84	4.84	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	New	2,047.27	6	\$316.80	26%	45%	\$33.51	18.20	18.20	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	6,716.46	10	\$2,363.47	25%	45%	\$55.80	87.10	87.10	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	139.12	10	\$58.75	10%	50%	\$66.96	18.04	18.04	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	77.29	10	\$20.85	6%	25%	\$42.78	4.76	4.76	MTR_GRWND>100HP-Motors-7PLN-v5-25

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,159.35	12	\$257.88	16%	25%	\$32.57	38.70	38.70	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	309.16	10	\$77.58	16%	36%	\$39.79	17.24	17.24	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	24,382.20	10	\$3,032.34	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	35,675.57	15	\$8,195.94	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	34,637.88	10	\$604.92	0%	0%	\$2.77	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	11,532.90	1	\$54.66	0%	0%	\$4.49	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	4,470.85	2	\$14.74	0%	0%	\$1.68	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	3,258.49	15	\$1,558.28	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	4.21	15	\$0.55	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	38.53	15	\$4.98	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	New	966.91	10	\$9,669.10	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	102.94	15	\$0.78	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	966.00	15	\$92.27	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	586.53	15	\$111.38	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	586.53	15	\$349.86	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	12.87	15	\$2.82	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	25.74	15	\$13.59	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	25.74	15	\$0.27	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	10,042.06	10	\$2,362.05	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	10,400.71	10	\$176.90	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	New	2,156.60	10	\$233.55	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	714.76	10	\$368.89	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	572.50	10	\$121.51	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	572.50	10	\$49.82	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	17,932.25	10	\$1,762.63	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	6.41	5	\$0.85	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPROCESS-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	160.07	1	\$6.72	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	40.44	10	\$205.94	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	New	164.29	10	\$205.94	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	5.60	10	\$205.94	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	52.10	10	\$205.94	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	13.30	10	\$205.94	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Motors	Transformer - High Efficiency	employee	New	1,159.35	10	\$205.94	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	New	286.25	10	\$205.94	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	34.71	10	\$205.94	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	New	116.82	3	\$9,956.76	3%	11%	\$708.32	0.04	0.04	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	New	474.60	3	\$9,956.76	3%	11%	\$708.32	0.14	0.14	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	New	16.18	3	\$9,956.76	3%	11%	\$708.32	0.03	0.03	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	150.50	3	\$9,956.76	3%	11%	\$708.32	0.26	0.26	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	38.42	3	\$9,956.76	3%	11%	\$708.32	0.07	0.07	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	New	3,349.24	3	\$9,956.76	3%	11%	\$708.32	5.96	5.96	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	New	826.94	3	\$9,956.76	3%	11%	\$708.32	1.47	1.47	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	100.27	3	\$9,956.76	3%	11%	\$708.32	0.29	0.19	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	New	173.66	3	\$2,422.45	10%	37%	\$169.53	0.84	0.86	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	New	44.34	3	\$2,422.45	10%	37%	\$169.53	0.22	0.22	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	New	3,864.52	3	\$2,422.45	10%	37%	\$169.53	32.55	32.55	IND_SEM-HVAC-AEG-1

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Food Mfg	Process	Commissioning	employee	New	954.16	3	\$2,422.45	10%	37%	\$169.53	8.04	8.04	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	New	115.70	3	\$2,422.45	10%	37%	\$169.53	0.61	0.50	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	173.66	3	\$1,537.82	0%	0%	\$107.62	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	44.34	3	\$1,537.82	0%	0%	\$107.62	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	New	3,864.52	3	\$1,537.82	0%	0%	\$107.62	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	New	954.16	3	\$1,537.82	0%	0%	\$107.62	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	115.70	3	\$1,537.82	0%	0%	\$107.62	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	308.95	12	\$168.56	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	5,145.42	11	\$4,009.39	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool

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Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.00	5	\$0.40	18%	30%	\$923,920.70	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.00	0.00	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	0.00	0.00	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.36	7%	33%	\$250,057.91	0.00	0.00	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.60	7%	33%	\$294,711.10	0.00	0.00	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.00	0.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.00	0.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.00	0.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.00	0.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,287.32	20	\$442.59	15%	20%	\$40.46	0.00	0.00	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.25	15	\$0.26	20%	50%	\$131.99	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	0.41	15	\$0.18	20%	50%	\$57.74	0.00	0.00	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	24.00	10	\$3.52	9%	38%	\$55.26	0.03	0.03	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	18.00	12	\$5.36	9%	38%	(\$20.41)	0.02	0.02	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	18.00	10	\$5.59	9%	38%	\$49.25	0.02	0.02	PUMP_VSD-Motors-UN-v1.0-3

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Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	12.76	10	\$1.28	9%	38%	\$47.96	0.01	0.01	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	15.08	10	\$2.12	9%	38%	\$19.12	0.02	0.02	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	23.20	10	\$10.70	9%	38%	\$73.14	0.03	0.03	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	22.81	10	\$1.71	17%	50%	\$38.58	0.03	0.03	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.00	0.00	CMPAIR_HTCMPDESDRY-Motors-MEMD-v.2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v.2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	26.07	10	\$2.82	9%	15%	\$17.16	0.01	0.01	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	5.21	10	\$1.22	9%	38%	\$6.29	0.01	0.01	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	13.04	10	\$1.23	18%	75%	\$41.65	0.03	0.03	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	9.78	15	\$7.52	26%	45%	\$101.34	0.01	0.01	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.33	10	\$0.12	17%	50%	\$56.20	0.00	0.00	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1.96	10	\$0.38	17%	50%	\$30.50	0.00	0.00	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.01	0.01	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1.96	15	\$1.03	17%	50%	\$69.67	0.00	0.00	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	18.25	6	\$2.82	26%	45%	\$33.51	0.01	0.01	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	51.80	10	\$18.23	25%	45%	\$55.80	0.04	0.04	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	1.05	10	\$0.44	10%	50%	\$66.96	0.01	0.01	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.59	10	\$0.16	6%	25%	\$42.78	0.00	0.00	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	8.78	12	\$1.95	16%	25%	\$32.57	0.02	0.02	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	2.34	10	\$0.59	16%	36%	\$39.79	0.01	0.01	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	547.58	10	\$68.10	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	801.21	15	\$184.07	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,635.60	10	\$604.92	0%	0%	\$58.65	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	259.01	1	\$54.66	0%	0%	\$199.98	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	100.41	2	\$14.74	0%	0%	\$74.60	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	1.70	15	\$0.81	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	40.34	15	\$5.23	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	775.66	15	\$100.19	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	10.15	10	\$101.46	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	2.26	15	\$0.02	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	0.50	15	\$0.05	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	0.31	15	\$0.06	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.31	15	\$0.18	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.28	15	\$0.06	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.57	15	\$0.30	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.57	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	77.45	10	\$18.22	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	80.21	10	\$1.36	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	7.73	10	\$0.84	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1.48	10	\$0.76	15%	40%	\$81.85	0.01	0.01	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	1.18	10	\$0.25	15%	29%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	1.18	10	\$0.10	15%	25%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	138.30	10	\$13.59	15%	29%	\$15.59	0.07	0.07	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.01	5	\$0.00	15%	38%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1.23	1	\$0.05	15%	52%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	0.14	10	\$1.25	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	0.61	10	\$1.25	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.02	10	\$1.25	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.32	10	\$1.25	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.07	10	\$1.25	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	8.78	10	\$1.25	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	0.59	10	\$1.25	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.18	10	\$1.25	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	0.41	3	\$60.41	3%	11%	\$706.77	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	1.78	3	\$60.41	3%	11%	\$706.77	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	0.06	3	\$60.41	3%	11%	\$706.77	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	0.93	3	\$60.41	3%	11%	\$706.77	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.22	3	\$60.41	3%	11%	\$706.77	0.00	0.00	IND_SEM-Lighting-AEG-1

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Paper Mfg	Motors	Strategic Energy Management	employee	Existing	25.35	3	\$60.41	3%	11%	\$706.77	0.02	0.02	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	Existing	1.71	3	\$60.41	3%	11%	\$706.77	0.00	0.00	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	0.51	3	\$60.41	3%	11%	\$706.77	0.00	0.00	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	1.07	3	\$15.51	0%	0%	\$169.48	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	0.25	3	\$15.51	0%	0%	\$169.48	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	Existing	29.25	3	\$15.51	0%	0%	\$169.48	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	Existing	1.97	3	\$15.51	0%	0%	\$169.48	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	0.59	3	\$15.51	0%	0%	\$169.48	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	1.07	3	\$9.85	10%	35%	\$107.59	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	0.25	3	\$9.85	10%	35%	\$107.59	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	Existing	29.25	3	\$9.85	10%	35%	\$107.59	0.03	0.03	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	Existing	1.97	3	\$9.85	10%	35%	\$107.59	0.00	0.00	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	0.59	3	\$9.85	10%	35%	\$107.59	0.00	0.00	IND_RCX-Process-AEG-1
Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	3.24	12	\$1.77	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	53.99	11	\$42.07	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool

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Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.00	5	\$0.40	18%	30%	\$855,354.46	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.00	0.00	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.00	0.00	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-All-7PLN-v2-1

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Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.36	22%	41%	\$276,764.36	0.00	0.00	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.60	22%	41%	\$326,186.57	0.00	0.00	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.00	0.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.00	0.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.00	0.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.00	0.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,287.32	20	\$442.59	15%	20%	\$40.46	0.00	0.00	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	0.25	15	\$0.26	20%	50%	\$131.99	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Paper Mfg	Process	Refrigeration - System Optimization	employee	New	0.41	15	\$0.18	20%	50%	\$57.74	0.00	0.00	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	24.00	10	\$3.52	9%	38%	\$55.26	0.01	0.01	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	18.00	12	\$5.36	9%	38%	(\$20.41)	0.01	0.01	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	18.00	10	\$5.59	9%	38%	\$49.25	0.01	0.01	PUMP_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	12.76	10	\$1.28	9%	38%	\$47.96	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	15.08	10	\$2.12	9%	38%	\$19.12	0.01	0.01	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	23.20	10	\$10.70	9%	38%	\$73.14	0.01	0.01	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	22.81	10	\$1.71	17%	50%	\$38.58	0.01	0.01	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.00	0.00	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	26.07	10	\$2.82	9%	15%	\$17.16	0.00	0.00	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	5.21	10	\$1.22	9%	38%	\$6.29	0.00	0.00	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	13.04	10	\$1.23	18%	75%	\$41.65	0.01	0.01	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	9.78	15	\$7.52	26%	45%	\$101.34	0.00	0.00	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.33	10	\$0.12	17%	50%	\$56.20	0.00	0.00	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1.96	10	\$0.38	17%	50%	\$30.50	0.00	0.00	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.00	0.00	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1.96	15	\$1.03	17%	50%	\$69.67	0.00	0.00	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	New	18.25	6	\$2.82	26%	45%	\$33.51	0.00	0.00	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	51.80	10	\$18.23	25%	45%	\$55.80	0.01	0.01	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	1.05	10	\$0.44	10%	50%	\$66.96	0.00	0.00	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.59	10	\$0.16	6%	25%	\$42.78	0.00	0.00	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	8.78	12	\$1.95	16%	25%	\$32.57	0.01	0.01	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	2.34	10	\$0.59	16%	36%	\$39.79	0.00	0.00	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	547.58	10	\$68.10	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	801.21	15	\$184.07	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,635.60	10	\$604.92	0%	0%	\$58.65	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	259.01	1	\$54.66	0%	0%	\$199.98	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	100.41	2	\$14.74	0%	0%	\$74.60	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	1.70	15	\$0.81	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	40.34	15	\$5.23	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	775.66	15	\$100.19	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	New	10.15	10	\$101.46	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	2.26	15	\$0.02	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	0.50	15	\$0.05	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	0.31	15	\$0.06	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.31	15	\$0.18	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.28	15	\$0.06	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.57	15	\$0.30	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.57	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	77.45	10	\$18.22	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	80.21	10	\$1.36	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	7.73	10	\$0.84	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	1.48	10	\$0.76	15%	40%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	1.18	10	\$0.25	15%	29%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	1.18	10	\$0.10	15%	25%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	138.30	10	\$13.59	15%	29%	\$15.59	0.02	0.02	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	0.01	5	\$0.00	15%	38%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1.23	1	\$0.05	15%	52%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	0.15	10	\$1.25	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	0.62	10	\$1.25	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.02	10	\$1.25	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	0.26	10	\$1.25	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.07	10	\$1.25	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	8.78	10	\$1.25	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	New	0.59	10	\$1.25	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	0.17	10	\$1.25	15%	15%	\$18.50	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	New	0.44	3	\$60.41	3%	11%	\$708.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	New	1.78	3	\$60.41	3%	11%	\$708.50	0.00	0.00	IND_SEM-HVAC-AEG-1

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Paper Mfg	Ventilation	Strategic Energy Management	employee	New	0.06	3	\$60.41	3%	11%	\$708.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	0.76	3	\$60.41	3%	11%	\$708.50	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.19	3	\$60.41	3%	11%	\$708.50	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Motors	Strategic Energy Management	employee	New	25.35	3	\$60.41	3%	11%	\$708.50	0.00	0.00	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	New	1.71	3	\$60.41	3%	11%	\$708.50	0.00	0.00	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	0.50	3	\$60.41	3%	11%	\$708.50	0.00	0.00	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	New	0.88	3	\$15.51	10%	35%	\$170.20	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	New	0.22	3	\$15.51	10%	35%	\$170.20	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	New	29.25	3	\$15.51	10%	35%	\$170.20	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	New	1.97	3	\$15.51	10%	35%	\$170.20	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	New	0.58	3	\$15.51	10%	35%	\$170.20	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	0.88	3	\$9.85	0%	0%	\$108.05	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	0.22	3	\$9.85	0%	0%	\$108.05	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	New	29.25	3	\$9.85	0%	0%	\$108.05	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	New	1.97	3	\$9.85	0%	0%	\$108.05	0.00	0.00	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	0.58	3	\$9.85	0%	0%	\$108.05	0.00	0.00	IND_RCX-Process-AEG-1

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Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	3.24	12	\$1.77	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	53.99	11	\$42.07	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.00	0.00	Building Energy Simulation Tool

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Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.01	0.01	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	0.11	5	\$0.40	18%	30%	\$906.01	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.01	0.01	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	0.09	0.09	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.01	0.01	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.02	0.02	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.22	15	\$0.36	7%	33%	\$245.21	0.04	0.04	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.30	15	\$0.60	7%	33%	\$289.00	0.05	0.06	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.01	0.01	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.01	0.01	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.01	0.01	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.01	0.01	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.01	0.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,557.56	20	\$879.30	15%	20%	\$40.46	0.06	0.06	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	13.07	15	\$13.09	20%	50%	\$131.99	0.03	0.03	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	20.91	15	\$9.16	20%	50%	\$57.74	0.05	0.05	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	651.15	10	\$95.47	9%	38%	\$55.26	1.52	1.52	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	488.36	12	\$145.50	9%	38%	(\$20.41)	1.11	1.11	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	488.36	10	\$151.65	9%	38%	\$49.25	1.11	1.11	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	58.71	10	\$5.90	9%	38%	\$47.96	0.14	0.14	FAN_EQPTF-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	69.38	10	\$9.77	9%	38%	\$19.12	0.16	0.16	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	106.75	10	\$49.23	9%	38%	\$73.14	0.24	0.24	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	298.89	10	\$22.44	17%	50%	\$38.58	0.81	0.81	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.06	0.06	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1

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Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	341.59	10	\$36.96	9%	15%	\$17.16	0.16	0.16	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	68.32	10	\$16.04	9%	38%	\$6.29	0.16	0.16	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	170.79	10	\$16.13	18%	75%	\$41.65	0.80	0.80	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	128.10	15	\$98.54	26%	45%	\$101.34	0.19	0.19	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.27	10	\$1.51	17%	50%	\$56.20	0.01	0.01	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	25.62	10	\$4.93	17%	50%	\$30.50	0.07	0.07	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.20	0.20	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	25.62	15	\$13.55	17%	50%	\$69.67	0.07	0.07	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	Existing	239.11	6	\$37.00	26%	45%	\$33.51	0.36	0.36	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	143.27	10	\$50.41	25%	45%	\$55.80	0.23	0.23	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	10.27	10	\$4.34	10%	50%	\$66.96	0.16	0.16	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	5.71	10	\$1.54	6%	25%	\$42.78	0.04	0.04	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	85.61	12	\$19.04	16%	25%	\$32.57	0.32	0.32	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	22.83	10	\$5.73	16%	36%	\$39.79	0.19	0.19	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,087.90	10	\$135.30	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	1,591.79	15	\$365.69	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	12,328.34	10	\$604.92	0%	0%	\$7.78	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	514.58	1	\$54.66	0%	0%	\$100.66	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	199.48	2	\$14.74	0%	0%	\$37.55	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	87.12	15	\$41.66	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	5.62	15	\$0.73	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	410.29	15	\$53.00	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	Existing	275.31	10	\$2,753.15	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	2.80	15	\$0.02	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	25.83	15	\$2.47	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	15.68	15	\$2.98	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	15.68	15	\$9.35	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.35	15	\$0.08	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.70	15	\$0.37	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.70	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	214.20	10	\$50.38	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	221.85	10	\$3.77	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	128.61	10	\$13.93	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	26.01	10	\$13.42	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	20.83	10	\$4.42	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	20.83	10	\$1.81	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	382.51	10	\$37.60	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	0.23	5	\$0.03	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	3.41	1	\$0.14	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	3.57	10	\$13.89	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	15.44	10	\$13.89	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	0.53	10	\$13.89	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	1.91	10	\$13.89	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.44	10	\$13.89	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	85.61	10	\$13.89	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	10.42	10	\$13.89	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.26	10	\$13.89	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	10.30	3	\$671.78	3%	11%	\$707.34	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	44.60	3	\$671.78	3%	11%	\$707.34	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	1.54	3	\$671.78	3%	11%	\$707.34	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	5.52	3	\$671.78	3%	11%	\$707.34	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	1.28	3	\$671.78	3%	11%	\$707.34	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	247.33	3	\$671.78	3%	11%	\$707.34	0.04	0.04	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	30.09	3	\$671.78	3%	11%	\$707.34	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	3.64	3	\$671.78	3%	11%	\$707.34	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	6.37	3	\$156.17	0%	0%	\$170.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	1.48	3	\$156.17	0%	0%	\$170.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	Existing	285.38	3	\$156.17	0%	0%	\$170.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	Existing	34.72	3	\$156.17	0%	0%	\$170.23	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	4.20	3	\$156.17	0%	0%	\$170.23	0.00	0.00	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	6.37	3	\$99.14	5%	39%	\$108.06	0.01	0.01	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	1.48	3	\$99.14	5%	39%	\$108.06	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	285.38	3	\$99.14	5%	39%	\$108.06	0.73	0.73	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	Existing	34.72	3	\$99.14	5%	39%	\$108.06	0.09	0.09	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	4.20	3	\$99.14	5%	39%	\$108.06	0.02	0.01	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	87.97	12	\$48.00	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,465.09	11	\$1,141.62	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Petroleum Refining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST

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Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.00	0.00	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	0.12	5	\$0.40	18%	30%	\$838.78	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.00	0.00	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.03	0.03	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.18	15	\$0.36	22%	41%	\$271.40	0.03	0.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.25	15	\$0.60	22%	41%	\$319.86	0.04	0.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.00	0.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.00	0.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.00	0.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.00	0.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,557.56	20	\$879.30	15%	20%	\$40.46	0.02	0.02	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	13.07	15	\$13.09	20%	50%	\$131.99	0.01	0.01	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	20.91	15	\$9.16	20%	50%	\$57.74	0.02	0.02	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	651.15	10	\$95.47	9%	38%	\$55.26	0.42	0.42	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	488.36	12	\$145.50	9%	38%	(\$20.41)	0.39	0.39	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	488.36	10	\$151.65	9%	38%	\$49.25	0.36	0.36	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	58.71	10	\$5.90	9%	38%	\$47.96	0.04	0.04	FAN_EQPTF-Motors-UN-v1.0-5

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Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	69.38	10	\$9.77	9%	38%	\$19.12	0.05	0.05	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	106.75	10	\$49.23	9%	38%	\$73.14	0.08	0.08	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	298.89	10	\$22.44	17%	50%	\$38.58	0.22	0.22	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.02	0.02	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	341.59	10	\$36.96	9%	15%	\$17.16	0.05	0.05	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	68.32	10	\$16.04	9%	38%	\$6.29	0.05	0.05	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	170.79	10	\$16.13	18%	75%	\$41.65	0.22	0.22	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	128.10	15	\$98.54	26%	45%	\$101.34	0.07	0.07	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.27	10	\$1.51	17%	50%	\$56.20	0.00	0.00	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	25.62	10	\$4.93	17%	50%	\$30.50	0.02	0.02	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.07	0.07	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	25.62	15	\$13.55	17%	50%	\$69.67	0.02	0.02	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	New	239.11	6	\$37.00	26%	45%	\$33.51	0.09	0.09	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	143.27	10	\$50.41	25%	45%	\$55.80	0.07	0.07	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	10.27	10	\$4.34	10%	50%	\$66.96	0.05	0.05	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	5.71	10	\$1.54	6%	25%	\$42.78	0.01	0.01	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	85.61	12	\$19.04	16%	25%	\$32.57	0.11	0.11	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	22.83	10	\$5.73	16%	36%	\$39.79	0.05	0.05	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	New	1,087.90	10	\$135.30	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	New	1,591.79	15	\$365.69	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	12,328.34	10	\$604.92	0%	0%	\$7.78	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	514.58	1	\$54.66	0%	0%	\$100.66	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	199.48	2	\$14.74	0%	0%	\$37.55	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	87.12	15	\$41.66	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.62	15	\$0.73	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	410.29	15	\$53.00	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	New	275.31	10	\$2,753.15	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	2.80	15	\$0.02	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	25.83	15	\$2.47	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	15.68	15	\$2.98	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	15.68	15	\$9.35	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.35	15	\$0.08	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.70	15	\$0.37	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.70	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	214.20	10	\$50.38	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	221.85	10	\$3.77	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	128.61	10	\$13.93	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	26.01	10	\$13.42	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	20.83	10	\$4.42	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	20.83	10	\$1.81	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	382.51	10	\$37.60	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	0.23	5	\$0.03	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.41	1	\$0.14	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	3.82	10	\$13.89	15%	15%	\$18.45	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	15.51	10	\$13.89	15%	15%	\$18.45	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	0.53	10	\$13.89	15%	15%	\$18.45	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	1.56	10	\$13.89	15%	15%	\$18.45	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	0.40	10	\$13.89	15%	15%	\$18.45	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	85.61	10	\$13.89	15%	15%	\$18.45	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	10.42	10	\$13.89	15%	15%	\$18.45	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	1.24	10	\$13.89	15%	15%	\$18.45	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	11.03	3	\$671.78	3%	11%	\$706.51	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	New	44.80	3	\$671.78	3%	11%	\$706.51	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	1.53	3	\$671.78	3%	11%	\$706.51	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	4.52	3	\$671.78	3%	11%	\$706.51	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	1.15	3	\$671.78	3%	11%	\$706.51	0.00	0.00	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Motors	Strategic Energy Management	employee	New	247.33	3	\$671.78	3%	11%	\$706.51	0.00	0.00	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	New	30.09	3	\$671.78	3%	11%	\$706.51	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	3.58	3	\$671.78	3%	11%	\$706.51	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	New	5.21	3	\$156.17	5%	39%	\$170.69	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	1.33	3	\$156.17	5%	39%	\$170.69	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	New	285.38	3	\$156.17	5%	39%	\$170.69	0.11	0.11	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	New	34.72	3	\$156.17	5%	39%	\$170.69	0.01	0.01	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	New	4.13	3	\$156.17	5%	39%	\$170.69	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	5.21	3	\$99.14	0%	0%	\$108.36	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	1.33	3	\$99.14	0%	0%	\$108.36	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	New	285.38	3	\$99.14	0%	0%	\$108.36	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	New	34.72	3	\$99.14	0%	0%	\$108.36	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	4.13	3	\$99.14	0%	0%	\$108.36	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	New	87.97	12	\$48.00	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1

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Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,465.09	11	\$1,141.62	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.04	0.04	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.01	0.01	Building Energy Simulation Tool

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Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.03	0.03	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.03	0.03	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.01	0.01	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.01	0.01	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	0.06	5	\$0.40	18%	30%	\$1,709.67	0.01	0.01	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.05	0.05	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	0.40	0.40	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.02	0.02	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.09	0.09	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.02	0.02	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.12	15	\$0.36	7%	33%	\$462.72	0.23	0.24	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.16	15	\$0.60	7%	33%	\$545.35	0.32	0.34	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.03	0.04	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.03	0.04	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.05	0.06	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.08	0.08	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.05	0.06	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,172.33	20	\$746.86	15%	20%	\$40.46	0.45	0.45	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	4.57	15	\$4.58	20%	50%	\$131.99	0.04	0.04	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	7.31	15	\$3.20	20%	50%	\$57.74	0.07	0.07	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	64.72	10	\$9.49	9%	38%	\$55.26	0.56	0.56	PUMP_EQPT-Motors-7PLN-v5-1

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Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	48.54	12	\$14.46	9%	38%	(\$20.41)	0.41	0.41	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	48.54	10	\$15.07	9%	38%	\$49.25	0.41	0.41	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	50.09	10	\$5.04	9%	38%	\$47.96	0.44	0.44	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	59.20	10	\$8.33	9%	38%	\$19.12	0.50	0.50	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	91.08	10	\$42.01	9%	38%	\$73.14	0.77	0.77	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	28.69	10	\$2.15	17%	50%	\$38.58	0.29	0.29	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.02	0.02	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	32.79	10	\$3.55	9%	15%	\$17.16	0.06	0.06	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	6.56	10	\$1.54	9%	38%	\$6.29	0.06	0.06	CMPAIR_SYSCRTL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	16.39	10	\$1.55	18%	75%	\$41.65	0.29	0.29	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	12.30	15	\$9.46	26%	45%	\$101.34	0.07	0.07	CMPAIR_VSD-Motors-UN-v1.0-3

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Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.41	10	\$0.15	17%	50%	\$56.20	0.00	0.00	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	2.46	10	\$0.47	17%	50%	\$30.50	0.02	0.02	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.07	0.07	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	2.46	15	\$1.30	17%	50%	\$69.67	0.02	0.02	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	Existing	22.95	6	\$3.55	26%	45%	\$33.51	0.13	0.13	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	353.07	10	\$124.24	25%	45%	\$55.80	2.10	2.10	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	5.00	10	\$2.11	10%	50%	\$66.96	0.30	0.30	MTR_GRWND<100HP-Motors-7PLN-v5-17
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	2.78	10	\$0.75	6%	25%	\$42.78	0.08	0.08	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	41.64	12	\$9.26	16%	25%	\$32.57	0.59	0.59	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	11.10	10	\$2.79	16%	36%	\$39.79	0.34	0.34	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	924.03	10	\$114.92	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	1,352.03	15	\$310.61	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100

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Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	490.14	10	\$604.92	0%	0%	\$195.71	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	437.07	1	\$54.66	0%	0%	\$118.51	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	169.44	2	\$14.74	0%	0%	\$44.20	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	30.46	15	\$14.57	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	34.16	15	\$4.43	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	116.63	15	\$15.06	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	Existing	27.36	10	\$273.65	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	6.83	15	\$0.05	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	9.03	15	\$0.86	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	5.48	15	\$1.04	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	5.48	15	\$3.27	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.85	15	\$0.19	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	1.71	15	\$0.90	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	1.71	15	\$0.02	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	527.89	10	\$124.17	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	546.74	10	\$9.30	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	446.78	10	\$48.39	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	49.98	10	\$25.79	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	40.03	10	\$8.50	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	40.03	10	\$3.48	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	942.66	10	\$92.66	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	0.45	5	\$0.06	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	8.41	1	\$0.35	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	4.40	10	\$10.71	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	19.05	10	\$10.71	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	0.66	10	\$10.71	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.89	10	\$10.71	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.67	10	\$10.71	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	41.64	10	\$10.71	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	20.01	10	\$10.71	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	2.68	10	\$10.71	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	12.71	3	\$518.01	3%	11%	\$703.79	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	55.03	3	\$518.01	3%	11%	\$703.79	0.01	0.01	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	1.90	3	\$518.01	3%	11%	\$703.79	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	8.34	3	\$518.01	3%	11%	\$703.79	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	1.94	3	\$518.01	3%	11%	\$703.79	0.00	0.00	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	120.28	3	\$518.01	3%	11%	\$703.79	0.07	0.07	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	57.82	3	\$518.01	3%	11%	\$703.79	0.03	0.03	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	7.73	3	\$518.01	3%	11%	\$703.79	0.01	0.01	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	9.63	3	\$103.66	0%	0%	\$164.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	2.24	3	\$103.66	0%	0%	\$164.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	138.79	3	\$103.66	0%	0%	\$164.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	Existing	66.72	3	\$103.66	0%	0%	\$164.78	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	8.92	3	\$103.66	0%	0%	\$164.78	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	9.63	3	\$65.81	10%	40%	\$104.61	0.07	0.07	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	2.24	3	\$65.81	10%	40%	\$104.61	0.02	0.02	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	138.79	3	\$65.81	10%	40%	\$104.61	1.17	1.17	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	66.72	3	\$65.81	10%	40%	\$104.61	0.56	0.56	IND_RCX-Process-AEG-1

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Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	8.92	3	\$65.81	10%	40%	\$104.61	0.13	0.10	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	8.74	12	\$4.77	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	145.62	11	\$113.47	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool

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Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.01	0.01	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	0.06	5	\$0.40	18%	30%	\$1,582.79	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.02	0.02	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.13	0.13	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1

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Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.09	15	\$0.36	22%	41%	\$512.14	0.13	0.13	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.13	15	\$0.60	22%	41%	\$603.59	0.18	0.19	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.01	0.01	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.01	0.02	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.01	0.01	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.01	0.01	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.01	0.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,172.33	20	\$746.86	15%	20%	\$40.46	0.16	0.16	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	4.57	15	\$4.58	20%	50%	\$131.99	0.01	0.01	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	7.31	15	\$3.20	20%	50%	\$57.74	0.02	0.02	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	64.72	10	\$9.49	9%	38%	\$55.26	0.15	0.15	PUMP_EQPT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	48.54	12	\$14.46	9%	38%	(\$20.41)	0.14	0.14	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	48.54	10	\$15.07	9%	38%	\$49.25	0.13	0.13	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	50.09	10	\$5.04	9%	38%	\$47.96	0.12	0.12	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	59.20	10	\$8.33	9%	38%	\$19.12	0.16	0.16	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	91.08	10	\$42.01	9%	38%	\$73.14	0.25	0.25	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	28.69	10	\$2.15	17%	50%	\$38.58	0.08	0.08	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.01	0.01	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1

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Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	32.79	10	\$3.55	9%	15%	\$17.16	0.02	0.02	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	6.56	10	\$1.54	9%	38%	\$6.29	0.02	0.02	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	16.39	10	\$1.55	18%	75%	\$41.65	0.08	0.08	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	12.30	15	\$9.46	26%	45%	\$101.34	0.03	0.03	CMPAIR_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.41	10	\$0.15	17%	50%	\$56.20	0.00	0.00	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	2.46	10	\$0.47	17%	50%	\$30.50	0.01	0.01	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.02	0.02	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	2.46	15	\$1.30	17%	50%	\$69.67	0.01	0.01	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	New	22.95	6	\$3.55	26%	45%	\$33.51	0.03	0.03	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	353.07	10	\$124.24	25%	45%	\$55.80	0.68	0.68	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	5.00	10	\$2.11	10%	50%	\$66.96	0.10	0.10	MTR_GRWND<100HP-Motors-7PLN-v5-17

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	2.78	10	\$0.75	6%	25%	\$42.78	0.03	0.03	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	41.64	12	\$9.26	16%	25%	\$32.57	0.21	0.21	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	11.10	10	\$2.79	16%	36%	\$39.79	0.09	0.09	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	New	924.03	10	\$114.92	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	New	1,352.03	15	\$310.61	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	490.14	10	\$604.92	0%	0%	\$195.71	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	437.07	1	\$54.66	0%	0%	\$118.51	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	169.44	2	\$14.74	0%	0%	\$44.20	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	30.46	15	\$14.57	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	34.16	15	\$4.43	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	116.63	15	\$15.06	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	New	27.36	10	\$273.65	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1

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Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	6.83	15	\$0.05	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	9.03	15	\$0.86	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	5.48	15	\$1.04	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	5.48	15	\$3.27	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.85	15	\$0.19	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	1.71	15	\$0.90	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	1.71	15	\$0.02	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	527.89	10	\$124.17	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	546.74	10	\$9.30	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	446.78	10	\$48.39	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	49.98	10	\$25.79	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	40.03	10	\$8.50	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1

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Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	40.03	10	\$3.48	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	942.66	10	\$92.66	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	0.45	5	\$0.06	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	8.41	1	\$0.35	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	4.71	10	\$10.71	15%	15%	\$18.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	19.13	10	\$10.71	15%	15%	\$18.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	0.65	10	\$10.71	15%	15%	\$18.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	2.36	10	\$10.71	15%	15%	\$18.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	0.60	10	\$10.71	15%	15%	\$18.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	41.64	10	\$10.71	15%	15%	\$18.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	20.01	10	\$10.71	15%	15%	\$18.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	2.63	10	\$10.71	15%	15%	\$18.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	13.60	3	\$518.01	3%	11%	\$703.46	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	55.27	3	\$518.01	3%	11%	\$703.46	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	1.88	3	\$518.01	3%	11%	\$703.46	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	6.83	3	\$518.01	3%	11%	\$703.46	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	1.74	3	\$518.01	3%	11%	\$703.46	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	120.28	3	\$518.01	3%	11%	\$703.46	0.00	0.00	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	57.82	3	\$518.01	3%	11%	\$703.46	0.00	0.00	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	7.60	3	\$518.01	3%	11%	\$703.46	0.00	0.00	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	7.88	3	\$103.66	10%	40%	\$165.90	0.01	0.01	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	2.01	3	\$103.66	10%	40%	\$165.90	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	New	138.79	3	\$103.66	10%	40%	\$165.90	0.19	0.19	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	New	66.72	3	\$103.66	10%	40%	\$165.90	0.09	0.09	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	8.77	3	\$103.66	10%	40%	\$165.90	0.01	0.01	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	7.88	3	\$65.81	0%	0%	\$105.31	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	2.01	3	\$65.81	0%	0%	\$105.31	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	138.79	3	\$65.81	0%	0%	\$105.31	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	66.72	3	\$65.81	0%	0%	\$105.31	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	8.77	3	\$65.81	0%	0%	\$105.31	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	8.74	12	\$4.77	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	145.62	11	\$113.47	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Stone Clay Glass Products	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.05	0.05	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.17	0.18	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.01	0.01	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.12	0.12	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.01	0.01	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.11	0.12	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.06	0.06	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.04	0.05	AEG-BEST

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Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.03	5	\$0.40	18%	30%	\$3,143.33	0.05	0.05	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.22	0.22	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	1.61	1.61	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.02	0.03	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.10	0.10	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.37	0.37	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.08	0.08	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.06	15	\$0.36	7%	33%	\$850.74	0.83	0.88	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.09	15	\$0.60	7%	33%	\$1,002.65	1.16	1.24	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.11	0.14	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.11	0.15	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.19	0.21	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.28	0.30	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.19	0.21	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	12,400.22	20	\$4,263.25	15%	20%	\$40.46	1.04	1.04	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	6.80	15	\$6.81	20%	50%	\$131.99	0.13	0.13	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	10.88	15	\$4.77	20%	50%	\$57.74	0.20	0.20	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	29.47	10	\$4.32	9%	38%	\$55.26	0.52	0.52	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	22.10	12	\$6.58	9%	38%	(\$20.41)	0.38	0.38	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	22.10	10	\$6.86	9%	38%	\$49.25	0.38	0.38	PUMP_VSD-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	7.74	10	\$0.78	9%	38%	\$47.96	0.14	0.14	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	9.15	10	\$1.29	9%	38%	\$19.12	0.16	0.16	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	14.07	10	\$6.49	9%	38%	\$73.14	0.24	0.24	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	52.10	10	\$3.91	17%	50%	\$38.58	1.08	1.08	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.08	0.08	CMPAIR_HTCMPDES DRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	59.54	10	\$6.44	9%	15%	\$17.16	0.22	0.22	E3T
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	11.91	10	\$2.80	9%	38%	\$6.29	0.21	0.21	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	29.77	10	\$2.81	18%	75%	\$41.65	1.06	1.06	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	22.33	15	\$17.18	26%	45%	\$101.34	0.26	0.26	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.74	10	\$0.26	17%	50%	\$56.20	0.02	0.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	4.47	10	\$0.86	17%	50%	\$30.50	0.09	0.09	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3

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Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.26	0.26	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	4.47	15	\$2.36	17%	50%	\$69.67	0.09	0.09	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	41.68	6	\$6.45	26%	45%	\$33.51	0.48	0.48	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	134.63	10	\$47.38	25%	45%	\$55.80	1.63	1.63	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	1.99	10	\$0.84	10%	50%	\$66.96	0.24	0.24	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.10	10	\$0.30	6%	25%	\$42.78	0.06	0.06	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	16.56	12	\$3.68	16%	25%	\$32.57	0.48	0.48	2015-mdu-irp-report--volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	4.42	10	\$1.11	16%	36%	\$39.79	0.27	0.27	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	5,274.63	10	\$655.99	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	7,717.74	15	\$1,773.04	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,115.87	10	\$604.92	0%	0%	\$85.97	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	2,494.93	1	\$54.66	0%	0%	\$20.76	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	967.18	2	\$14.74	0%	0%	\$7.74	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	45.32	15	\$21.67	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	26.21	15	\$3.40	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	35.70	15	\$4.61	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	12.46	10	\$124.60	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	19.70	15	\$0.15	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	13.43	15	\$1.28	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	8.16	15	\$1.55	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	8.16	15	\$4.87	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.46	15	\$0.54	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	4.93	15	\$2.60	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	4.93	15	\$0.05	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1

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Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	201.29	10	\$47.35	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	208.48	10	\$3.55	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	184.77	10	\$20.01	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	28.16	10	\$14.53	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	22.55	10	\$4.79	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	22.55	10	\$1.96	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	359.45	10	\$35.33	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.25	5	\$0.03	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	3.21	1	\$0.13	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	8.74	10	\$9.92	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	37.84	10	\$9.92	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.31	10	\$9.92	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	5.08	10	\$9.92	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.18	10	\$9.92	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	16.56	10	\$9.92	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	11.28	10	\$9.92	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	3.06	10	\$9.92	15%	15%	\$18.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	25.25	3	\$479.58	3%	11%	\$707.08	0.01	0.01	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	109.30	3	\$479.58	3%	11%	\$707.08	0.02	0.02	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	3.77	3	\$479.58	3%	11%	\$707.08	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	14.69	3	\$479.58	3%	11%	\$707.08	0.01	0.01	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	3.42	3	\$479.58	3%	11%	\$707.08	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	47.83	3	\$479.58	3%	11%	\$707.08	0.05	0.05	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	32.58	3	\$479.58	3%	11%	\$707.08	0.04	0.04	IND_SEM-Process-AEG-1

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Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	8.83	3	\$479.58	3%	11%	\$707.08	0.02	0.01	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	16.95	3	\$54.55	0%	0%	\$158.00	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	3.94	3	\$54.55	0%	0%	\$158.00	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	55.19	3	\$54.55	0%	0%	\$158.00	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	37.59	3	\$54.55	0%	0%	\$158.00	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	10.19	3	\$54.55	0%	0%	\$158.00	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	16.95	3	\$34.63	5%	39%	\$100.30	0.27	0.29	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	3.94	3	\$34.63	5%	39%	\$100.30	0.07	0.07	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	55.19	3	\$34.63	5%	39%	\$100.30	1.08	1.08	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	37.59	3	\$34.63	5%	39%	\$100.30	0.73	0.73	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	10.19	3	\$34.63	5%	39%	\$100.30	0.34	0.27	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	3.98	12	\$2.17	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1

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Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	66.30	11	\$51.67	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.08	0.08	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.05	0.05	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.04	0.04	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.02	0.02	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.01	0.01	AEG-BEST
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.03	5	\$0.40	18%	30%	\$2,910.05	0.01	0.01	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.08	0.08	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.53	0.53	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-All-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.05	0.05	STAT_WIFI-All-7PLN-v2-1

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Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.05	15	\$0.36	22%	41%	\$941.60	0.47	0.47	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.07	15	\$0.60	22%	41%	\$1,109.74	0.65	0.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.04	0.05	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.05	0.06	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.05	0.05	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.04	0.04	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.04	0.04	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	12,400.22	20	\$4,263.25	15%	20%	\$40.46	0.38	0.38	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	6.80	15	\$6.81	20%	50%	\$131.99	0.04	0.04	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	10.88	15	\$4.77	20%	50%	\$57.74	0.07	0.07	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	29.47	10	\$4.32	9%	38%	\$55.26	0.14	0.14	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	22.10	12	\$6.58	9%	38%	(\$20.41)	0.13	0.13	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	22.10	10	\$6.86	9%	38%	\$49.25	0.12	0.12	PUMP_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	7.74	10	\$0.78	9%	38%	\$47.96	0.04	0.04	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	9.15	10	\$1.29	9%	38%	\$19.12	0.05	0.05	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	14.07	10	\$6.49	9%	38%	\$73.14	0.08	0.08	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	52.10	10	\$3.91	17%	50%	\$38.58	0.29	0.29	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.03	0.03	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	59.54	10	\$6.44	9%	15%	\$17.16	0.07	0.07	E3T

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Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	11.91	10	\$2.80	9%	38%	\$6.29	0.07	0.07	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	29.77	10	\$2.81	18%	75%	\$41.65	0.29	0.29	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	22.33	15	\$17.18	26%	45%	\$101.34	0.10	0.10	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.74	10	\$0.26	17%	50%	\$56.20	0.00	0.00	CMPAIR_LPDPILT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	4.47	10	\$0.86	17%	50%	\$30.50	0.03	0.03	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.09	0.09	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	4.47	15	\$2.36	17%	50%	\$69.67	0.03	0.03	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	41.68	6	\$6.45	26%	45%	\$33.51	0.11	0.11	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	134.63	10	\$47.38	25%	45%	\$55.80	0.53	0.53	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	1.99	10	\$0.84	10%	50%	\$66.96	0.08	0.08	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.10	10	\$0.30	6%	25%	\$42.78	0.02	0.02	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	16.56	12	\$3.68	16%	25%	\$32.57	0.17	0.17	2015-mdu-irp-report--volume-iii.pdf

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Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	4.42	10	\$1.11	16%	36%	\$39.79	0.07	0.07	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	5,274.63	10	\$655.99	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	7,717.74	15	\$1,773.04	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,115.87	10	\$604.92	0%	0%	\$85.97	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,494.93	1	\$54.66	0%	0%	\$20.76	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	967.18	2	\$14.74	0%	0%	\$7.74	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	45.32	15	\$21.67	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	26.21	15	\$3.40	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	35.70	15	\$4.61	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	12.46	10	\$124.60	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	19.70	15	\$0.15	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	13.43	15	\$1.28	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	8.16	15	\$1.55	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	8.16	15	\$4.87	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.46	15	\$0.54	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	4.93	15	\$2.60	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	4.93	15	\$0.05	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	201.29	10	\$47.35	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	208.48	10	\$3.55	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	184.77	10	\$20.01	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	28.16	10	\$14.53	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	22.55	10	\$4.79	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	22.55	10	\$1.96	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	359.45	10	\$35.33	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1

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Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.25	5	\$0.03	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.21	1	\$0.13	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	9.35	10	\$9.92	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	38.00	10	\$9.92	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.30	10	\$9.92	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	4.16	10	\$9.92	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	1.06	10	\$9.92	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	16.56	10	\$9.92	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	11.28	10	\$9.92	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	3.00	10	\$9.92	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	27.02	3	\$479.58	3%	11%	\$704.54	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	109.78	3	\$479.58	3%	11%	\$704.54	0.00	0.00	IND_SEM-HVAC-AEG-1

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Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	3.74	3	\$479.58	3%	11%	\$704.54	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	12.01	3	\$479.58	3%	11%	\$704.54	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	3.07	3	\$479.58	3%	11%	\$704.54	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	47.83	3	\$479.58	3%	11%	\$704.54	0.00	0.00	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	32.58	3	\$479.58	3%	11%	\$704.54	0.00	0.00	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	8.68	3	\$479.58	3%	11%	\$704.54	0.00	0.00	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	13.86	3	\$54.55	5%	39%	\$160.95	0.03	0.03	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	3.54	3	\$54.55	5%	39%	\$160.95	0.01	0.01	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	New	55.19	3	\$54.55	5%	39%	\$160.95	0.18	0.18	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	New	37.59	3	\$54.55	5%	39%	\$160.95	0.12	0.12	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	10.01	3	\$54.55	5%	39%	\$160.95	0.02	0.02	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	13.86	3	\$34.63	0%	0%	\$102.18	0.00	0.00	IND_RCX-Motors-AEG-1

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Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	3.54	3	\$34.63	0%	0%	\$102.18	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	55.19	3	\$34.63	0%	0%	\$102.18	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	37.59	3	\$34.63	0%	0%	\$102.18	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	10.01	3	\$34.63	0%	0%	\$102.18	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	3.98	12	\$2.17	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	66.30	11	\$51.67	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.06	0.06	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.21	0.21	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.04	0.04	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.02	0.02	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.01	0.01	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.14	0.14	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.03	0.03	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.01	0.01	Building Energy Simulation Tool

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Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.02	0.02	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.02	0.02	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.14	0.14	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.07	0.07	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.05	0.06	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.02	5	\$0.40	18%	30%	\$5,140.98	0.07	0.07	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.26	0.27	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	1.96	1.97	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.12	0.12	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.45	0.45	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.09	0.09	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.04	15	\$0.36	7%	33%	\$1,391.40	1.30	1.38	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.05	15	\$0.60	7%	33%	\$1,639.87	1.82	1.94	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.17	0.23	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.18	0.23	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.30	0.32	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.43	0.47	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.30	0.32	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	3,609.78	20	\$1,241.06	15%	20%	\$40.46	2.45	2.45	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$24.67	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$17.27	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	569.94	10	\$83.57	9%	38%	\$55.26	13.05	13.05	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	427.45	12	\$127.35	9%	38%	(\$20.41)	9.53	9.53	PUMP_SYSOPT-Motors-UN-v1.0-5

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Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	427.45	10	\$132.74	9%	38%	\$49.25	9.53	9.53	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	771.76	10	\$77.59	9%	38%	\$47.96	17.67	17.67	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	912.08	10	\$128.38	9%	38%	\$19.12	20.34	20.34	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	1,403.19	10	\$647.20	9%	38%	\$73.14	31.28	31.28	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	52.53	10	\$3.94	17%	50%	\$38.58	1.40	1.40	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.10	0.10	CMPAIR_HTCMPDESDRY-Motors-MEMD-v.2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v.2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	60.04	10	\$6.50	9%	15%	\$17.16	0.28	0.28	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	12.01	10	\$2.82	9%	38%	\$6.29	0.27	0.27	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	30.02	10	\$2.83	18%	75%	\$41.65	1.37	1.37	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	22.51	15	\$17.32	26%	45%	\$101.34	0.33	0.33	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.75	10	\$0.27	17%	50%	\$56.20	0.02	0.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	4.50	10	\$0.87	17%	50%	\$30.50	0.12	0.12	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.34	0.34	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	4.50	15	\$2.38	17%	50%	\$69.67	0.12	0.12	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Wastewater	Motors	Compressed Air - End Use Optimization	employee	Existing	42.03	6	\$6.50	26%	45%	\$33.51	0.62	0.62	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	125.55	10	\$44.18	25%	45%	\$55.80	1.96	1.96	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	19.61	10	\$8.28	10%	50%	\$66.96	3.07	3.07	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	10.90	10	\$2.94	6%	25%	\$42.78	0.81	0.81	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	163.44	12	\$36.36	16%	25%	\$32.57	6.07	6.07	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	43.59	10	\$10.94	16%	36%	\$39.79	3.49	3.49	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,535.48	10	\$190.96	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	Existing	2,246.68	15	\$516.14	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	3,453.04	10	\$604.92	0%	0%	\$27.78	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	726.29	1	\$54.66	0%	0%	\$71.32	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	281.55	2	\$14.74	0%	0%	\$26.60	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$78.50	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	190.60	15	\$24.62	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Wastewater	Motors	Automatic Milker Takeoffs	Cows	Existing	240.98	10	\$2,409.78	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$1.00	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$4.65	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$5.61	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$17.62	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$3.59	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$17.34	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$0.35	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	187.72	10	\$44.16	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	194.43	10	\$3.31	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$16.00	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	104.05	10	\$53.70	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	83.34	10	\$17.69	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	83.34	10	\$7.25	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	335.22	10	\$32.95	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	0.93	5	\$0.12	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	2.99	1	\$0.13	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	8.27	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	35.80	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	1.24	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	6.16	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.43	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	163.44	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	Existing	8.33	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	5.56	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	Existing	23.89	3	\$1,296.57	3%	11%	\$704.44	0.05	0.05	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	Existing	103.41	3	\$1,296.57	3%	11%	\$704.44	0.21	0.21	IND_SEM-HVAC-AEG-1
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	3.57	3	\$1,296.57	3%	11%	\$704.44	0.04	0.04	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	17.78	3	\$1,296.57	3%	11%	\$704.44	0.18	0.20	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	4.14	3	\$1,296.57	3%	11%	\$704.44	0.05	0.05	IND_SEM-Lighting-AEG-1

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Wastewater	Motors	Strategic Energy Management	employee	Existing	472.17	3	\$1,296.57	3%	11%	\$704.44	5.95	5.95	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	Existing	24.08	3	\$1,296.57	3%	11%	\$704.44	0.30	0.30	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	16.06	3	\$1,296.57	3%	11%	\$704.44	0.35	0.27	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	Existing	20.52	3	\$284.96	0%	0%	\$166.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	Existing	4.77	3	\$284.96	0%	0%	\$166.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	Existing	544.82	3	\$284.96	0%	0%	\$166.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	Existing	27.78	3	\$284.96	0%	0%	\$166.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	Existing	18.54	3	\$284.96	0%	0%	\$166.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	20.52	3	\$180.90	5%	39%	\$105.79	0.42	0.46	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	4.77	3	\$180.90	5%	39%	\$105.79	0.11	0.11	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	Existing	544.82	3	\$180.90	5%	39%	\$105.79	13.73	13.73	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	Existing	27.78	3	\$180.90	5%	39%	\$105.79	0.70	0.70	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	18.54	3	\$180.90	5%	39%	\$105.79	0.81	0.63	IND_RCX-Process-AEG-1
Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	77.00	12	\$42.01	15%	35%	\$50.30	1.20	1.20	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,282.36	11	\$999.24	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.03	0.03	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.10	0.10	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.02	0.02	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.01	0.01	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool

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Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.06	0.06	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.01	0.01	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.01	0.01	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.05	0.05	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.02	0.02	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.02	0.02	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.02	5	\$0.40	18%	30%	\$4,759.46	0.01	0.01	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.09	0.10	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.65	0.65	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.02	0.02	STAT_WIFI-All-7PLN-v2-1

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Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.06	0.06	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.03	15	\$0.36	22%	41%	\$1,540.00	0.73	0.73	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.04	15	\$0.60	22%	41%	\$1,815.00	1.02	1.03	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.07	0.08	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.08	0.09	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.07	0.08	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.06	0.06	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.06	0.06	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	New	3,609.78	20	\$1,241.06	15%	20%	\$40.46	0.90	0.90	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$24.67	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$17.27	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	569.94	10	\$83.57	9%	38%	\$55.26	3.56	3.56	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	New	427.45	12	\$127.35	9%	38%	(\$20.41)	3.36	3.36	PUMP_SYSOPT-Motors-UN-v1.0-5
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	427.45	10	\$132.74	9%	38%	\$49.25	3.10	3.10	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	771.76	10	\$77.59	9%	38%	\$47.96	4.82	4.82	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	New	912.08	10	\$128.38	9%	38%	\$19.12	6.61	6.61	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	1,403.19	10	\$647.20	9%	38%	\$73.14	10.17	10.17	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	52.53	10	\$3.94	17%	50%	\$38.58	0.38	0.38	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.04	0.04	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	60.04	10	\$6.50	9%	15%	\$17.16	0.09	0.09	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	New	12.01	10	\$2.82	9%	38%	\$6.29	0.09	0.09	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	30.02	10	\$2.83	18%	75%	\$41.65	0.38	0.38	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	22.51	15	\$17.32	26%	45%	\$101.34	0.12	0.12	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.75	10	\$0.27	17%	50%	\$56.20	0.01	0.01	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	4.50	10	\$0.87	17%	50%	\$30.50	0.03	0.03	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.11	0.11	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	4.50	15	\$2.38	17%	50%	\$69.67	0.04	0.04	CMPAIR_STORAGE-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - End Use Optimization	employee	New	42.03	6	\$6.50	26%	45%	\$33.51	0.15	0.15	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	125.55	10	\$44.18	25%	45%	\$55.80	0.64	0.64	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	19.61	10	\$8.28	10%	50%	\$66.96	1.00	1.00	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	10.90	10	\$2.94	6%	25%	\$42.78	0.26	0.26	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	163.44	12	\$36.36	16%	25%	\$32.57	2.14	2.14	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	43.59	10	\$10.94	16%	36%	\$39.79	0.95	0.95	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	New	1,535.48	10	\$190.96	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	New	2,246.68	15	\$516.14	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	3,453.04	10	\$604.92	0%	0%	\$27.78	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	726.29	1	\$54.66	0%	0%	\$71.32	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	281.55	2	\$14.74	0%	0%	\$26.60	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$78.50	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	190.60	15	\$24.62	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Wastewater	Motors	Automatic Milker Takeoffs	Cows	New	240.98	10	\$2,409.78	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$1.00	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$4.65	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$5.61	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$17.62	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$3.59	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$17.34	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$0.35	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	New	187.72	10	\$44.16	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	194.43	10	\$3.31	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$16.00	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Wastewater	Process	Paper: Premium Control Large Material	employee	New	104.05	10	\$53.70	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	83.34	10	\$17.69	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	83.34	10	\$7.25	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	335.22	10	\$32.95	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	New	0.93	5	\$0.12	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	2.99	1	\$0.13	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	New	8.85	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	New	35.95	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	New	1.23	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	5.04	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	1.29	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	New	163.44	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	New	8.33	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	5.46	10	\$26.82	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	New	25.56	3	\$1,296.57	3%	11%	\$704.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	New	103.86	3	\$1,296.57	3%	11%	\$704.52	0.01	0.01	IND_SEM-HVAC-AEG-1

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Wastewater	Ventilation	Strategic Energy Management	employee	New	3.54	3	\$1,296.57	3%	11%	\$704.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	14.55	3	\$1,296.57	3%	11%	\$704.52	0.01	0.01	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	3.71	3	\$1,296.57	3%	11%	\$704.52	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Motors	Strategic Energy Management	employee	New	472.17	3	\$1,296.57	3%	11%	\$704.52	0.37	0.37	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	New	24.08	3	\$1,296.57	3%	11%	\$704.52	0.02	0.02	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	15.79	3	\$1,296.57	3%	11%	\$704.52	0.02	0.01	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	New	16.79	3	\$284.96	5%	39%	\$167.52	0.04	0.04	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	New	4.29	3	\$284.96	5%	39%	\$167.52	0.01	0.01	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	New	544.82	3	\$284.96	5%	39%	\$167.52	2.26	2.26	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	New	27.78	3	\$284.96	5%	39%	\$167.52	0.02	0.02	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	New	18.22	3	\$284.96	5%	39%	\$167.52	0.05	0.04	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	New	16.79	3	\$180.90	0%	0%	\$106.34	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	New	4.29	3	\$180.90	0%	0%	\$106.34	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	New	544.82	3	\$180.90	0%	0%	\$106.34	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	New	27.78	3	\$180.90	0%	0%	\$106.34	0.00	0.00	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	New	18.22	3	\$180.90	0%	0%	\$106.34	0.00	0.00	IND_RCX-Process-AEG-1

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Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	New	77.00	12	\$42.01	15%	35%	\$50.30	0.42	0.42	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,282.36	11	\$999.24	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.09	0.09	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.34	0.34	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.07	0.07	Building Energy Simulation Tool

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Water	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.03	0.03	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.01	0.01	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.22	0.22	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.05	0.05	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.01	0.01	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.03	0.03	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.01	0.01	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.03	0.03	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.22	0.22	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.11	0.11	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.02	0.02	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.08	0.09	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	Existing	0.04	5	\$0.40	18%	30%	\$2,729.33	0.10	0.11	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.02	0.02	VENT_DCV-Ventilation-7PLN-v5-5

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Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.42	0.43	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	3.09	3.10	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.05	0.05	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.19	0.19	STAT_WIFI-All-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.72	0.72	STAT_WIFI-All-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.15	0.15	STAT_WIFI-All-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.07	15	\$0.36	7%	33%	\$738.69	2.06	2.20	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.10	15	\$0.60	7%	33%	\$870.60	2.88	3.07	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.27	0.36	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.28	0.36	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.47	0.51	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.68	0.74	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.47	0.51	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,536.71	20	\$528.33	15%	20%	\$40.46	3.86	3.86	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$10.50	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$7.35	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	876.50	10	\$128.51	9%	38%	\$55.26	74.24	74.24	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	Existing	657.37	12	\$195.85	9%	38%	(\$20.41)	54.23	54.23	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	657.37	10	\$204.14	9%	38%	\$49.25	54.23	54.23	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$1.55	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$2.56	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$12.89	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	22.36	10	\$1.68	17%	50%	\$38.58	2.21	2.21	CMPAIR_EQPT-Motors-7PLN-v5-2
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.16	0.16	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

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Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	25.56	10	\$2.77	9%	15%	\$17.16	0.44	0.44	E3T
Water	Motors	Compressed Air - System Controls	employee	Existing	5.11	10	\$1.20	9%	38%	\$6.29	0.42	0.42	CMPAIR_SYSCtrl-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	12.78	10	\$1.21	18%	75%	\$41.65	2.16	2.16	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	9.58	15	\$7.37	26%	45%	\$101.34	0.53	0.53	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.32	10	\$0.11	17%	50%	\$56.20	0.03	0.03	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1.92	10	\$0.37	17%	50%	\$30.50	0.19	0.19	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.54	0.54	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1.92	15	\$1.01	17%	50%	\$69.67	0.19	0.19	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	Existing	17.89	6	\$2.77	26%	45%	\$33.51	0.98	0.98	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	35.61	10	\$12.53	25%	45%	\$55.80	2.06	2.06	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	10.44	10	\$4.41	10%	50%	\$66.96	4.83	4.83	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	5.80	10	\$1.56	6%	25%	\$42.78	1.28	1.28	MTR_GRWND>100HP-Motors-7PLN-v5-25
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	86.97	12	\$19.35	16%	25%	\$32.57	9.57	9.57	2015-mdi-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	23.19	10	\$5.82	16%	36%	\$39.79	5.50	5.50	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	Existing	653.66	10	\$81.29	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Miscellaneous	Circulating Engine Block Heater	unit	Existing	956.43	15	\$219.73	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	5,310.35	10	\$604.92	0%	0%	\$18.06	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	309.19	1	\$54.66	0%	0%	\$167.53	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	119.86	2	\$14.74	0%	0%	\$62.49	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$33.42	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	688.55	15	\$88.94	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	Existing	370.59	10	\$3,705.94	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$0.43	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$1.98	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$2.39	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$7.50	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$1.53	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$7.38	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$0.15	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	Existing	53.24	10	\$12.52	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	55.14	10	\$0.94	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$6.81	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	Existing	44.29	10	\$22.86	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	35.48	10	\$7.53	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	Existing	35.48	10	\$3.09	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	Existing	95.07	10	\$9.34	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	Existing	0.40	5	\$0.05	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.85	1	\$0.04	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	Existing	3.52	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	Existing	15.24	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Ventilation	Transformer - High Efficiency	employee	Existing	0.53	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.62	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.61	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Motors	Transformer - High Efficiency	employee	Existing	69.58	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	Existing	3.55	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	2.37	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	Existing	10.17	3	\$551.96	3%	11%	\$704.44	0.08	0.09	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	Existing	44.02	3	\$551.96	3%	11%	\$704.44	0.34	0.34	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	Existing	1.52	3	\$551.96	3%	11%	\$704.44	0.07	0.07	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	Existing	7.57	3	\$551.96	3%	11%	\$704.44	0.29	0.31	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	1.76	3	\$551.96	3%	11%	\$704.44	0.07	0.08	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	Existing	201.01	3	\$551.96	3%	11%	\$704.44	9.37	9.37	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	Existing	10.25	3	\$551.96	3%	11%	\$704.44	0.48	0.48	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	Existing	6.84	3	\$551.96	3%	11%	\$704.44	0.55	0.43	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	Existing	8.74	3	\$121.31	0%	0%	\$166.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	Existing	2.03	3	\$121.31	0%	0%	\$166.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	Existing	231.93	3	\$121.31	0%	0%	\$166.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Process	Commissioning	employee	Existing	11.83	3	\$121.31	0%	0%	\$166.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	Existing	7.89	3	\$121.31	0%	0%	\$166.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	Existing	8.74	3	\$77.01	5%	39%	\$105.79	0.66	0.72	IND_RCX-Motors-AEG-1

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Water	Exterior Lighting	Retrocommissioning	employee	Existing	2.03	3	\$77.01	5%	39%	\$105.79	0.17	0.18	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	Existing	231.93	3	\$77.01	5%	39%	\$105.79	21.62	21.62	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	Existing	11.83	3	\$77.01	5%	39%	\$105.79	1.10	1.10	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	Existing	7.89	3	\$77.01	5%	39%	\$105.79	1.27	0.99	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	118.41	12	\$64.61	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	15%	20%	\$41.97	5.82	5.82	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,972.12	11	\$1,536.70	15%	20%	\$119.37	28.54	28.54	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Water	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.04	0.04	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.15	0.15	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.03	0.03	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.02	0.02	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.01	0.01	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.10	0.10	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.02	0.02	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.01	0.01	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.01	0.01	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.01	0.01	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.07	0.07	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.04	0.04	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.02	0.02	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	New	0.04	5	\$0.40	18%	30%	\$2,526.78	0.02	0.02	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.15	0.15	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	1.02	1.02	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.03	0.03	STAT_WIFI-All-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.09	0.09	STAT_WIFI-All-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.02	0.02	STAT_WIFI-All-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.36	22%	41%	\$817.58	1.14	1.15	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.08	15	\$0.60	22%	41%	\$963.58	1.59	1.61	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.11	0.12	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.13	0.14	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.12	0.12	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.09	0.10	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.10	0.10	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,536.71	20	\$528.33	15%	20%	\$40.46	1.41	1.41	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$10.50	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$7.35	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	New	876.50	10	\$128.51	9%	38%	\$55.26	20.27	20.27	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	New	657.37	12	\$195.85	9%	38%	(\$20.41)	19.11	19.11	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	New	657.37	10	\$204.14	9%	38%	\$49.25	17.63	17.63	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$1.55	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$2.56	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$12.89	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	22.36	10	\$1.68	17%	50%	\$38.58	0.60	0.60	CMPAIR_EQPT-Motors-7PLN-v5-2

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Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.06	0.06	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	25.56	10	\$2.77	9%	15%	\$17.16	0.14	0.14	E3T
Water	Motors	Compressed Air - System Controls	employee	New	5.11	10	\$1.20	9%	38%	\$6.29	0.14	0.14	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	New	12.78	10	\$1.21	18%	75%	\$41.65	0.59	0.59	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	9.58	15	\$7.37	26%	45%	\$101.34	0.20	0.20	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.32	10	\$0.11	17%	50%	\$56.20	0.01	0.01	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1.92	10	\$0.37	17%	50%	\$30.50	0.05	0.05	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.18	0.18	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1.92	15	\$1.01	17%	50%	\$69.67	0.06	0.06	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	New	17.89	6	\$2.77	26%	45%	\$33.51	0.23	0.23	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	New	35.61	10	\$12.53	25%	45%	\$55.80	0.67	0.67	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	10.44	10	\$4.41	10%	50%	\$66.96	1.57	1.57	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	5.80	10	\$1.56	6%	25%	\$42.78	0.41	0.41	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	86.97	12	\$19.35	16%	25%	\$32.57	3.37	3.37	2015-mdi-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	23.19	10	\$5.82	16%	36%	\$39.79	1.50	1.50	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	New	653.66	10	\$81.29	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Circulating Engine Block Heater	unit	New	956.43	15	\$219.73	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	5,310.35	10	\$604.92	0%	0%	\$18.06	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	309.19	1	\$54.66	0%	0%	\$167.53	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	119.86	2	\$14.74	0%	0%	\$62.49	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$33.42	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	688.55	15	\$88.94	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	New	370.59	10	\$3,705.94	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$0.43	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$1.98	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$2.39	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$7.50	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$1.53	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$7.38	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$0.15	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	New	53.24	10	\$12.52	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	55.14	10	\$0.94	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$6.81	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	New	44.29	10	\$22.86	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	New	35.48	10	\$7.53	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	New	35.48	10	\$3.09	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	New	95.07	10	\$9.34	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	New	0.40	5	\$0.05	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.85	1	\$0.04	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	New	3.77	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	New	15.31	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Ventilation	Transformer - High Efficiency	employee	New	0.52	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	New	2.14	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	0.55	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Motors	Transformer - High Efficiency	employee	New	69.58	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	New	3.55	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	New	2.33	10	\$11.42	15%	15%	\$18.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	New	10.88	3	\$551.96	3%	11%	\$704.52	0.01	0.01	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	New	44.22	3	\$551.96	3%	11%	\$704.52	0.02	0.02	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	New	1.51	3	\$551.96	3%	11%	\$704.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	New	6.19	3	\$551.96	3%	11%	\$704.52	0.02	0.02	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	New	1.58	3	\$551.96	3%	11%	\$704.52	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	New	201.01	3	\$551.96	3%	11%	\$704.52	0.59	0.59	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	New	10.25	3	\$551.96	3%	11%	\$704.52	0.03	0.03	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	New	6.72	3	\$551.96	3%	11%	\$704.52	0.03	0.02	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	New	7.15	3	\$121.31	5%	39%	\$167.52	0.06	0.06	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	New	1.82	3	\$121.31	5%	39%	\$167.52	0.02	0.02	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	New	231.93	3	\$121.31	5%	39%	\$167.52	2.86	2.86	IND_SEM-HVAC-AEG-1

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Water	Process	Commissioning	employee	New	11.83	3	\$121.31	5%	39%	\$167.52	0.04	0.04	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	New	7.75	3	\$121.31	5%	39%	\$167.52	0.07	0.06	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	New	7.15	3	\$77.01	0%	0%	\$106.34	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Exterior Lighting	Retrocommissioning	employee	New	1.82	3	\$77.01	0%	0%	\$106.34	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	New	231.93	3	\$77.01	0%	0%	\$106.34	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	New	11.83	3	\$77.01	0%	0%	\$106.34	0.00	0.00	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	New	7.75	3	\$77.01	0%	0%	\$106.34	0.00	0.00	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	New	118.41	12	\$64.61	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	15%	20%	\$41.97	2.05	2.05	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,972.12	11	\$1,536.70	15%	20%	\$119.37	9.68	9.68	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Water	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.02	0.02	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool

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Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.01	0.01	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.01	0.01	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.13	5	\$0.40	18%	30%	\$800.99	0.01	0.01	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.02	0.02	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	0.17	0.17	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.04	0.04	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.25	15	\$0.36	7%	33%	\$216.79	0.07	0.07	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.34	15	\$0.60	7%	33%	\$255.50	0.10	0.10	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.01	0.01	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.01	0.01	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.02	0.02	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.02	0.03	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.02	0.02	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	3,170.90	20	\$1,090.17	15%	20%	\$40.46	0.18	0.18	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	21.98	15	\$22.02	20%	50%	\$131.99	0.05	0.05	RFG_FHPC-Refrigeration-RTF-v1.3-23
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	35.17	15	\$15.41	20%	50%	\$57.74	0.09	0.09	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	248.06	10	\$36.37	9%	38%	\$55.26	0.58	0.58	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	186.04	12	\$55.43	9%	38%	(\$20.41)	0.42	0.42	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	186.04	10	\$57.77	9%	38%	\$49.25	0.42	0.42	PUMP_VSD-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	62.34	10	\$6.27	9%	38%	\$47.96	0.15	0.15	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	73.68	10	\$10.37	9%	38%	\$19.12	0.17	0.17	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	113.35	10	\$52.28	9%	38%	\$73.14	0.26	0.26	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	459.97	10	\$34.53	17%	50%	\$38.58	1.25	1.25	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.09	0.09	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	525.68	10	\$56.87	9%	15%	\$17.16	0.25	0.25	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	105.14	10	\$24.69	9%	38%	\$6.29	0.24	0.24	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	262.84	10	\$24.82	18%	75%	\$41.65	1.23	1.23	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	197.13	15	\$151.65	26%	45%	\$101.34	0.30	0.30	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	6.57	10	\$2.33	17%	50%	\$56.20	0.02	0.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	39.43	10	\$7.58	17%	50%	\$30.50	0.11	0.11	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.30	0.30	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	39.43	15	\$20.85	17%	50%	\$69.67	0.11	0.11	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	367.98	6	\$56.94	26%	45%	\$33.51	0.56	0.56	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	223.04	10	\$78.49	25%	45%	\$55.80	0.36	0.36	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	8.04	10	\$3.40	10%	50%	\$66.96	0.13	0.13	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	4.47	10	\$1.21	6%	25%	\$42.78	0.03	0.03	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	67.03	12	\$14.91	16%	25%	\$32.57	0.25	0.25	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	17.87	10	\$4.49	16%	36%	\$39.79	0.15	0.15	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,348.79	10	\$167.75	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	1,973.53	15	\$453.39	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,878.60	10	\$604.92	0%	0%	\$51.06	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	637.99	1	\$54.66	0%	0%	\$81.19	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	247.32	2	\$14.74	0%	0%	\$30.28	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	146.55	15	\$70.08	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	10.36	15	\$1.34	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	92.92	15	\$12.00	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	104.88	10	\$1,048.81	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	599.97	15	\$4.57	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	43.45	15	\$4.15	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	26.38	15	\$5.01	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	26.38	15	\$15.73	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	75.00	15	\$16.42	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	149.99	15	\$79.23	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	149.99	15	\$1.59	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	333.48	10	\$78.44	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	345.39	10	\$5.87	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	235.04	10	\$25.45	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	101.19	10	\$52.23	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	81.05	10	\$17.20	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	81.05	10	\$7.05	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	595.50	10	\$58.53	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.91	5	\$0.12	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.32	1	\$0.22	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	6.85	10	\$17.85	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	29.67	10	\$17.85	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.02	10	\$17.85	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	3.48	10	\$17.85	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.81	10	\$17.85	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	67.03	10	\$17.85	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	40.53	10	\$17.85	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	3.91	10	\$17.85	15%	15%	\$18.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	19.80	3	\$863.08	3%	11%	\$703.71	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	85.71	3	\$863.08	3%	11%	\$703.71	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	2.96	3	\$863.08	3%	11%	\$703.71	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	10.06	3	\$863.08	3%	11%	\$703.71	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	2.34	3	\$863.08	3%	11%	\$703.71	0.00	0.00	IND_SEM-Lighting-AEG-1

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Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	193.63	3	\$863.08	3%	11%	\$703.71	0.03	0.03	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	117.08	3	\$863.08	3%	11%	\$703.71	0.02	0.02	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	11.29	3	\$863.08	3%	11%	\$703.71	0.00	0.00	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	11.61	3	\$177.66	0%	0%	\$165.69	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	2.70	3	\$177.66	0%	0%	\$165.69	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	Existing	223.42	3	\$177.66	0%	0%	\$165.69	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	Existing	135.09	3	\$177.66	0%	0%	\$165.69	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	13.03	3	\$177.66	0%	0%	\$165.69	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	11.61	3	\$112.78	5%	39%	\$105.18	0.02	0.03	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	2.70	3	\$112.78	5%	39%	\$105.18	0.01	0.01	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	223.42	3	\$112.78	5%	39%	\$105.18	0.57	0.57	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	Existing	135.09	3	\$112.78	5%	39%	\$105.18	0.35	0.35	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	13.03	3	\$112.78	5%	39%	\$105.18	0.06	0.04	IND_RCX-Process-AEG-1
Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	33.51	12	\$18.28	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	558.13	11	\$434.90	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool

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Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	0.13	5	\$0.40	18%	30%	\$741.54	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.01	0.01	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.05	0.05	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-All-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.20	15	\$0.36	22%	41%	\$239.94	0.05	0.05	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.28	15	\$0.60	22%	41%	\$282.79	0.06	0.06	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.00	0.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.00	0.01	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.00	0.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.00	0.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	3,170.90	20	\$1,090.17	15%	20%	\$40.46	0.06	0.06	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	21.98	15	\$22.02	20%	50%	\$131.99	0.02	0.02	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	35.17	15	\$15.41	20%	50%	\$57.74	0.03	0.03	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	248.06	10	\$36.37	9%	38%	\$55.26	0.16	0.16	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	186.04	12	\$55.43	9%	38%	(\$20.41)	0.15	0.15	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	186.04	10	\$57.77	9%	38%	\$49.25	0.14	0.14	PUMP_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	62.34	10	\$6.27	9%	38%	\$47.96	0.04	0.04	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	73.68	10	\$10.37	9%	38%	\$19.12	0.05	0.05	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	113.35	10	\$52.28	9%	38%	\$73.14	0.08	0.08	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	459.97	10	\$34.53	17%	50%	\$38.58	0.34	0.34	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.03	0.03	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	525.68	10	\$56.87	9%	15%	\$17.16	0.08	0.08	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	105.14	10	\$24.69	9%	38%	\$6.29	0.08	0.08	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	262.84	10	\$24.82	18%	75%	\$41.65	0.34	0.34	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	197.13	15	\$151.65	26%	45%	\$101.34	0.11	0.11	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	6.57	10	\$2.33	17%	50%	\$56.20	0.00	0.00	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	39.43	10	\$7.58	17%	50%	\$30.50	0.03	0.03	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.10	0.10	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	39.43	15	\$20.85	17%	50%	\$69.67	0.03	0.03	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	New	367.98	6	\$56.94	26%	45%	\$33.51	0.13	0.13	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	223.04	10	\$78.49	25%	45%	\$55.80	0.12	0.12	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	8.04	10	\$3.40	10%	50%	\$66.96	0.04	0.04	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	4.47	10	\$1.21	6%	25%	\$42.78	0.01	0.01	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	67.03	12	\$14.91	16%	25%	\$32.57	0.09	0.09	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	17.87	10	\$4.49	16%	36%	\$39.79	0.04	0.04	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	1,348.79	10	\$167.75	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	1,973.53	15	\$453.39	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,878.60	10	\$604.92	0%	0%	\$51.06	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	637.99	1	\$54.66	0%	0%	\$81.19	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	247.32	2	\$14.74	0%	0%	\$30.28	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	146.55	15	\$70.08	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	10.36	15	\$1.34	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	92.92	15	\$12.00	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	New	104.88	10	\$1,048.81	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	599.97	15	\$4.57	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	43.45	15	\$4.15	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	26.38	15	\$5.01	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	26.38	15	\$15.73	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	75.00	15	\$16.42	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	149.99	15	\$79.23	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	149.99	15	\$1.59	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	333.48	10	\$78.44	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	345.39	10	\$5.87	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	235.04	10	\$25.45	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	101.19	10	\$52.23	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	81.05	10	\$17.20	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	81.05	10	\$7.05	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	595.50	10	\$58.53	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	0.91	5	\$0.12	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.32	1	\$0.22	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	7.33	10	\$17.85	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	29.80	10	\$17.85	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.02	10	\$17.85	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	2.85	10	\$17.85	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.73	10	\$17.85	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	67.03	10	\$17.85	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	40.53	10	\$17.85	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	3.84	10	\$17.85	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	21.19	3	\$863.08	3%	11%	\$702.89	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	New	86.08	3	\$863.08	3%	11%	\$702.89	0.00	0.00	IND_SEM-HVAC-AEG-1

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Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	2.93	3	\$863.08	3%	11%	\$702.89	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	8.23	3	\$863.08	3%	11%	\$702.89	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	2.10	3	\$863.08	3%	11%	\$702.89	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Motors	Strategic Energy Management	employee	New	193.63	3	\$863.08	3%	11%	\$702.89	0.00	0.00	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	New	117.08	3	\$863.08	3%	11%	\$702.89	0.00	0.00	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	11.09	3	\$863.08	3%	11%	\$702.89	0.00	0.00	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	New	9.50	3	\$177.66	5%	39%	\$166.55	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	2.42	3	\$177.66	5%	39%	\$166.55	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	New	223.42	3	\$177.66	5%	39%	\$166.55	0.09	0.09	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	New	135.09	3	\$177.66	5%	39%	\$166.55	0.05	0.05	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	New	12.80	3	\$177.66	5%	39%	\$166.55	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	9.50	3	\$112.78	0%	0%	\$105.73	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	2.42	3	\$112.78	0%	0%	\$105.73	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	New	223.42	3	\$112.78	0%	0%	\$105.73	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	New	135.09	3	\$112.78	0%	0%	\$105.73	0.00	0.00	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	12.80	3	\$112.78	0%	0%	\$105.73	0.00	0.00	IND_RCX-Process-AEG-1

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Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	33.51	12	\$18.28	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	558.13	11	\$434.90	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.34	0.35	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	1.31	1.32	Building Energy Simulation Tool

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Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.27	0.27	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.13	0.14	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.06	0.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.88	0.88	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.18	0.18	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.04	0.04	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.12	0.12	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.03	0.03	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.10	0.10	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.85	0.87	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.41	0.42	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.07	0.08	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.33	0.34	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.24	5	\$0.40	18%	30%	\$418.82	0.40	0.41	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.09	0.09	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	1.62	1.67	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	12.09	12.12	HVLS-Heating-AEG-1
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.19	0.19	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.73	0.74	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	2.80	2.80	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.57	0.58	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.47	15	\$0.36	7%	33%	\$113.35	3.53	3.77	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.66	15	\$0.60	7%	33%	\$133.59	4.94	5.28	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.47	0.61	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.48	0.63	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.81	0.88	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	1.18	1.28	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.81	0.88	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	16,432.65	20	\$5,649.62	15%	20%	\$40.46	8.00	8.00	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	52.87	15	\$52.97	20%	50%	\$131.99	1.13	1.13	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	84.59	15	\$37.07	20%	50%	\$57.74	1.81	1.81	AEG Research - prior study

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Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	40.20	10	\$5.89	9%	38%	\$55.26	0.83	0.83	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	30.15	12	\$8.98	9%	38%	(\$20.41)	0.60	0.60	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	30.15	10	\$9.36	9%	38%	\$49.25	0.60	0.60	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	35.38	10	\$3.56	9%	38%	\$47.96	0.73	0.73	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	41.81	10	\$5.89	9%	38%	\$19.12	0.84	0.84	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	64.32	10	\$29.67	9%	38%	\$73.14	1.29	1.29	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	203.65	10	\$15.29	17%	50%	\$38.58	4.88	4.88	CMPAIR_EQPT-Motors-7PLN-v5-2
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.36	0.36	CMPAIR_HTCMPDESDRY-Motors-MEMD-v.2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.02	0.02	CMPAIR_RFRGDRY-Motors-MEMD-v.2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	232.75	10	\$25.18	9%	15%	\$17.16	0.98	0.98	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	46.55	10	\$10.93	9%	38%	\$6.29	0.93	0.93	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	116.37	10	\$10.99	18%	75%	\$41.65	4.78	4.78	CMPAIR_LEAK-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	87.28	15	\$67.14	26%	45%	\$101.34	1.16	1.16	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.91	10	\$1.03	17%	50%	\$56.20	0.07	0.07	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	17.46	10	\$3.36	17%	50%	\$30.50	0.42	0.42	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	1.18	1.18	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	17.46	15	\$9.23	17%	50%	\$69.67	0.42	0.42	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	162.92	6	\$25.21	26%	45%	\$33.51	2.17	2.17	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	340.68	10	\$119.88	25%	45%	\$55.80	4.78	4.78	MATHAND_VSD-Material Handling-7PLN-v5-2
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	6.58	10	\$2.78	10%	50%	\$66.96	0.74	0.74	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.65	10	\$0.99	6%	25%	\$42.78	0.19	0.19	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	54.82	12	\$12.19	16%	25%	\$32.57	1.46	1.46	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	14.62	10	\$3.67	16%	36%	\$39.79	0.84	0.84	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	6,989.89	10	\$869.31	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	10,227.47	15	\$2,349.61	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	304.46	10	\$604.92	0%	0%	\$315.07	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	3,306.25	1	\$54.66	0%	0%	\$15.67	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	1,281.70	2	\$14.74	0%	0%	\$5.84	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	352.44	15	\$168.55	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	22.33	15	\$2.90	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	6.26	15	\$0.81	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	17.00	10	\$169.98	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	105.95	15	\$0.81	15%	75%	\$1.00	4.46	4.46	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	104.48	15	\$9.98	15%	75%	\$12.58	4.40	4.40	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	63.44	15	\$12.05	15%	75%	\$25.02	2.67	2.67	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	63.44	15	\$37.84	15%	75%	(\$57.09)	2.74	2.74	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1

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Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	13.24	15	\$2.90	15%	75%	\$28.85	0.57	0.57	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	26.49	15	\$13.99	15%	75%	(\$78.66)	1.15	1.15	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	26.49	15	\$0.28	15%	75%	(\$14.14)	1.15	1.15	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	509.37	10	\$119.81	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	527.56	10	\$8.97	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	683.06	10	\$73.97	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	169.49	10	\$87.48	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	135.76	10	\$28.82	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	135.76	10	\$11.81	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	909.58	10	\$89.41	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.52	5	\$0.20	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	8.12	1	\$0.34	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1

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Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	56.77	10	\$54.26	15%	15%	\$18.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	245.75	10	\$54.26	15%	15%	\$18.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	8.49	10	\$54.26	15%	15%	\$18.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	18.69	10	\$54.26	15%	15%	\$18.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.35	10	\$54.26	15%	15%	\$18.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	43.85	10	\$54.26	15%	15%	\$18.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	67.88	10	\$54.26	15%	15%	\$18.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	20.25	10	\$54.26	15%	15%	\$18.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	164.01	3	\$2,623.29	3%	11%	\$702.44	0.33	0.33	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	709.94	3	\$2,623.29	3%	11%	\$702.44	1.31	1.31	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	24.52	3	\$2,623.29	3%	11%	\$702.44	0.27	0.27	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	53.99	3	\$2,623.29	3%	11%	\$702.44	0.50	0.54	IND_SEM-Lighting-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	12.55	3	\$2,623.29	3%	11%	\$702.44	0.13	0.13	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	126.69	3	\$2,623.29	3%	11%	\$702.44	1.43	1.43	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	196.10	3	\$2,623.29	3%	11%	\$702.44	2.22	2.22	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	58.50	3	\$2,623.29	3%	11%	\$702.44	1.14	0.89	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	62.30	3	\$215.47	0%	0%	\$146.71	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	14.49	3	\$215.47	0%	0%	\$146.71	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	146.18	3	\$215.47	0%	0%	\$146.71	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	226.26	3	\$215.47	0%	0%	\$146.71	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	67.50	3	\$215.47	0%	0%	\$146.71	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	62.30	3	\$136.78	5%	39%	\$93.14	1.15	1.25	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	14.49	3	\$136.78	5%	39%	\$93.14	0.29	0.31	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	146.18	3	\$136.78	5%	39%	\$93.14	3.30	3.30	IND_RCX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	226.26	3	\$136.78	5%	39%	\$93.14	5.11	5.11	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	67.50	3	\$136.78	5%	39%	\$93.14	2.63	2.05	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	5.43	12	\$2.96	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	90.46	11	\$70.48	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.17	0.17	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.60	0.60	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.13	0.13	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.07	0.07	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.03	0.03	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.40	0.40	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.08	0.08	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.05	0.05	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.03	0.03	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.29	0.29	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.14	0.14	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.03	0.03	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.09	0.09	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.26	5	\$0.40	18%	30%	\$387.73	0.07	0.07	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.03	0.03	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.58	0.59	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	3.98	3.98	HVLS-Heating-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.10	0.10	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.37	0.37	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.08	0.08	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.38	15	\$0.36	22%	41%	\$125.46	1.98	2.00	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.54	15	\$0.60	22%	41%	\$147.86	2.77	2.80	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.19	0.21	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.22	0.24	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.20	0.21	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.16	0.17	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.17	0.17	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	16,432.65	20	\$5,649.62	15%	20%	\$40.46	2.93	2.93	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	52.87	15	\$52.97	20%	50%	\$131.99	0.37	0.37	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	84.59	15	\$37.07	20%	50%	\$57.74	0.59	0.59	AEG Research - prior study
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	40.20	10	\$5.89	9%	38%	\$55.26	0.23	0.23	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	30.15	12	\$8.98	9%	38%	(\$20.41)	0.21	0.21	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	30.15	10	\$9.36	9%	38%	\$49.25	0.20	0.20	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	35.38	10	\$3.56	9%	38%	\$47.96	0.20	0.20	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	41.81	10	\$5.89	9%	38%	\$19.12	0.27	0.27	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	64.32	10	\$29.67	9%	38%	\$73.14	0.42	0.42	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	203.65	10	\$15.29	17%	50%	\$38.58	1.33	1.33	CMPAIR_EQPT-Motors-7PLN-v5-2

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Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.13	0.13	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	232.75	10	\$25.18	9%	15%	\$17.16	0.32	0.32	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	46.55	10	\$10.93	9%	38%	\$6.29	0.30	0.30	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	116.37	10	\$10.99	18%	75%	\$41.65	1.31	1.31	CMPAIR_LEAK-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	87.28	15	\$67.14	26%	45%	\$101.34	0.43	0.43	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.91	10	\$1.03	17%	50%	\$56.20	0.02	0.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	17.46	10	\$3.36	17%	50%	\$30.50	0.11	0.11	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.39	0.39	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	17.46	15	\$9.23	17%	50%	\$69.67	0.14	0.14	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	162.92	6	\$25.21	26%	45%	\$33.51	0.51	0.51	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	340.68	10	\$119.88	25%	45%	\$55.80	1.56	1.56	MATHAND_VSD-Material Handling-7PLN-v5-2

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Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	6.58	10	\$2.78	10%	50%	\$66.96	0.24	0.24	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.65	10	\$0.99	6%	25%	\$42.78	0.06	0.06	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	54.82	12	\$12.19	16%	25%	\$32.57	0.52	0.52	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	14.62	10	\$3.67	16%	36%	\$39.79	0.23	0.23	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	6,989.89	10	\$869.31	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	10,227.47	15	\$2,349.61	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	304.46	10	\$604.92	0%	0%	\$315.07	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	3,306.25	1	\$54.66	0%	0%	\$15.67	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	1,281.70	2	\$14.74	0%	0%	\$5.84	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	352.44	15	\$168.55	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	22.33	15	\$2.90	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	6.26	15	\$0.81	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	17.00	10	\$169.98	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	105.95	15	\$0.81	15%	75%	\$1.00	1.66	1.66	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	104.48	15	\$9.98	15%	75%	\$12.58	1.64	1.64	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	63.44	15	\$12.05	15%	75%	\$25.02	0.99	0.99	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	63.44	15	\$37.84	15%	75%	(\$57.09)	0.89	0.89	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	13.24	15	\$2.90	15%	75%	\$28.85	0.19	0.19	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	26.49	15	\$13.99	15%	75%	(\$78.66)	0.37	0.37	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	26.49	15	\$0.28	15%	75%	(\$14.14)	0.37	0.37	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	509.37	10	\$119.81	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	527.56	10	\$8.97	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	683.06	10	\$73.97	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	169.49	10	\$87.48	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1

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Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	135.76	10	\$28.82	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	135.76	10	\$11.81	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	909.58	10	\$89.41	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	1.52	5	\$0.20	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	8.12	1	\$0.34	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	60.75	10	\$54.26	15%	15%	\$18.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	246.82	10	\$54.26	15%	15%	\$18.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	8.41	10	\$54.26	15%	15%	\$18.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	15.29	10	\$54.26	15%	15%	\$18.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	3.90	10	\$54.26	15%	15%	\$18.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	43.85	10	\$54.26	15%	15%	\$18.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	67.88	10	\$54.26	15%	15%	\$18.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	19.90	10	\$54.26	15%	15%	\$18.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	175.50	3	\$2,623.29	3%	11%	\$697.54	0.02	0.02	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	713.04	3	\$2,623.29	3%	11%	\$697.54	0.08	0.08	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	24.30	3	\$2,623.29	3%	11%	\$697.54	0.02	0.02	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	44.17	3	\$2,623.29	3%	11%	\$697.54	0.03	0.03	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	11.28	3	\$2,623.29	3%	11%	\$697.54	0.01	0.01	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	126.69	3	\$2,623.29	3%	11%	\$697.54	0.09	0.09	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	196.10	3	\$2,623.29	3%	11%	\$697.54	0.14	0.14	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	57.49	3	\$2,623.29	3%	11%	\$697.54	0.07	0.04	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	50.96	3	\$215.47	5%	39%	\$149.70	0.11	0.11	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	13.01	3	\$215.47	5%	39%	\$149.70	0.03	0.03	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	New	146.18	3	\$215.47	5%	39%	\$149.70	0.43	0.43	IND_SEM-HVAC-AEG-1

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Electronic Equipment Mfg	Process	Commissioning	employee	New	226.26	3	\$215.47	5%	39%	\$149.70	0.84	0.84	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	66.34	3	\$215.47	5%	39%	\$149.70	0.15	0.13	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	50.96	3	\$136.78	0%	0%	\$95.03	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	13.01	3	\$136.78	0%	0%	\$95.03	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	146.18	3	\$136.78	0%	0%	\$95.03	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	226.26	3	\$136.78	0%	0%	\$95.03	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	66.34	3	\$136.78	0%	0%	\$95.03	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	5.43	12	\$2.96	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	90.46	11	\$70.48	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

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Electronic Equipment Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.05	0.05	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.20	0.20	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.04	0.04	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool

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Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.13	0.13	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.03	0.03	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.02	0.02	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.13	0.13	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.06	0.06	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.05	0.05	AEG-BEST
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.01	5	\$0.40	18%	30%	\$10,437.11	0.06	0.06	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.25	0.25	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	1.84	1.84	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1

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Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.11	0.11	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.42	0.43	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.09	0.09	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.02	15	\$0.36	7%	33%	\$2,824.79	0.80	0.86	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.03	15	\$0.60	7%	33%	\$3,329.22	1.13	1.20	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.11	0.14	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.11	0.14	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.18	0.20	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.27	0.29	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.18	0.20	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,688.00	20	\$924.15	15%	20%	\$40.46	1.23	1.23	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	1.37	15	\$1.37	20%	50%	\$131.99	0.06	0.06	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	2.19	15	\$0.96	20%	50%	\$57.74	0.09	0.09	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	14.08	10	\$2.06	9%	38%	\$55.26	0.55	0.55	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	10.56	12	\$3.15	9%	38%	(\$20.41)	0.40	0.40	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	10.56	10	\$3.28	9%	38%	\$49.25	0.40	0.40	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	18.02	10	\$1.81	9%	38%	\$47.96	0.70	0.70	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	21.30	10	\$3.00	9%	38%	\$19.12	0.80	0.80	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	32.77	10	\$15.11	9%	38%	\$73.14	1.24	1.24	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	48.83	10	\$3.67	17%	50%	\$38.58	2.21	2.21	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.16	0.16	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	55.81	10	\$6.04	9%	15%	\$17.16	0.44	0.44	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	11.16	10	\$2.62	9%	38%	\$6.29	0.42	0.42	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	27.91	10	\$2.64	18%	75%	\$41.65	2.16	2.16	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	20.93	15	\$16.10	26%	45%	\$101.34	0.53	0.53	CMPAIR_VSD-Motors-UN-v1.0-3

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Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.70	10	\$0.25	17%	50%	\$56.20	0.03	0.03	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	4.19	10	\$0.81	17%	50%	\$30.50	0.19	0.19	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.54	0.54	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	4.19	15	\$2.21	17%	50%	\$69.67	0.19	0.19	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	Existing	39.07	6	\$6.05	26%	45%	\$33.51	0.98	0.98	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	42.30	10	\$14.89	25%	45%	\$55.80	1.12	1.12	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	1.35	10	\$0.57	10%	50%	\$66.96	0.29	0.29	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.75	10	\$0.20	6%	25%	\$42.78	0.08	0.08	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	11.24	12	\$2.50	16%	25%	\$32.57	0.57	0.57	2015-mdi-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	3.00	10	\$0.75	16%	36%	\$39.79	0.33	0.33	DRV_SYNBELT-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,143.38	10	\$142.20	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	Existing	1,672.98	15	\$384.34	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	213.27	10	\$604.92	0%	0%	\$449.79	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	540.83	1	\$54.66	0%	0%	\$95.77	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	209.66	2	\$14.74	0%	0%	\$35.72	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	9.14	15	\$4.37	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	70.42	15	\$9.13	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	84.56	15	\$10.92	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	Existing	5.95	10	\$59.54	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	4.95	15	\$0.04	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	2.71	15	\$0.26	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	1.65	15	\$0.31	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	1.65	15	\$0.98	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.62	15	\$0.14	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	1.24	15	\$0.65	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	1.24	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	63.25	10	\$14.88	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	65.51	10	\$1.11	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1

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Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	42.00	10	\$4.55	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	6.89	10	\$3.56	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	5.52	10	\$1.17	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	5.52	10	\$0.48	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	112.95	10	\$11.10	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	0.06	5	\$0.01	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1.01	1	\$0.04	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	4.57	10	\$4.80	15%	15%	\$18.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	19.79	10	\$4.80	15%	15%	\$18.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	0.68	10	\$4.80	15%	15%	\$18.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.25	10	\$4.80	15%	15%	\$18.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.52	10	\$4.80	15%	15%	\$18.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	9.00	10	\$4.80	15%	15%	\$18.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	2.76	10	\$4.80	15%	15%	\$18.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.66	10	\$4.80	15%	15%	\$18.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	13.20	3	\$232.27	3%	11%	\$705.17	0.01	0.01	IND_SEM-HVAC-AEG-1

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Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	57.16	3	\$232.27	3%	11%	\$705.17	0.02	0.02	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	1.97	3	\$232.27	3%	11%	\$705.17	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	6.49	3	\$232.27	3%	11%	\$705.17	0.01	0.01	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	1.51	3	\$232.27	3%	11%	\$705.17	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	25.99	3	\$232.27	3%	11%	\$705.17	0.07	0.07	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	7.97	3	\$232.27	3%	11%	\$705.17	0.02	0.02	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	4.78	3	\$232.27	3%	11%	\$705.17	0.02	0.02	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	7.48	3	\$23.24	0%	0%	\$153.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	1.74	3	\$23.24	0%	0%	\$153.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	Existing	29.98	3	\$23.24	0%	0%	\$153.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	Existing	9.20	3	\$23.24	0%	0%	\$153.52	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	5.52	3	\$23.24	0%	0%	\$153.52	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	7.48	3	\$14.75	5%	39%	\$97.46	0.26	0.28	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	1.74	3	\$14.75	5%	39%	\$97.46	0.07	0.07	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	29.98	3	\$14.75	5%	39%	\$97.46	1.28	1.28	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	Existing	9.20	3	\$14.75	5%	39%	\$97.46	0.39	0.39	IND_RCX-Process-AEG-1

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Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	5.52	3	\$14.75	5%	39%	\$97.46	0.41	0.32	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	1.90	12	\$1.04	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	31.68	11	\$24.69	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.03	0.03	Building Energy Simulation Tool

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Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.09	0.09	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.06	0.06	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.04	0.04	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.02	0.02	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.01	0.01	AEG-BEST

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Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.01	5	\$0.40	18%	30%	\$9,662.55	0.01	0.01	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.09	0.09	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.60	0.60	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.02	0.02	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.06	0.06	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.02	15	\$0.36	22%	41%	\$3,126.48	0.45	0.45	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.02	15	\$0.60	22%	41%	\$3,684.78	0.63	0.63	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.04	0.05	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.05	0.05	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.05	0.05	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.04	0.04	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.04	0.04	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,688.00	20	\$924.15	15%	20%	\$40.46	0.45	0.45	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	1.37	15	\$1.37	20%	50%	\$131.99	0.02	0.02	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	2.19	15	\$0.96	20%	50%	\$57.74	0.03	0.03	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	14.08	10	\$2.06	9%	38%	\$55.26	0.15	0.15	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	10.56	12	\$3.15	9%	38%	(\$20.41)	0.14	0.14	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	10.56	10	\$3.28	9%	38%	\$49.25	0.13	0.13	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	18.02	10	\$1.81	9%	38%	\$47.96	0.19	0.19	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	21.30	10	\$3.00	9%	38%	\$19.12	0.26	0.26	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	32.77	10	\$15.11	9%	38%	\$73.14	0.40	0.40	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	48.83	10	\$3.67	17%	50%	\$38.58	0.60	0.60	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.06	0.06	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1

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Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	55.81	10	\$6.04	9%	15%	\$17.16	0.14	0.14	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	11.16	10	\$2.62	9%	38%	\$6.29	0.14	0.14	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	27.91	10	\$2.64	18%	75%	\$41.65	0.59	0.59	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	20.93	15	\$16.10	26%	45%	\$101.34	0.20	0.20	CMPAIR_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.70	10	\$0.25	17%	50%	\$56.20	0.01	0.01	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	4.19	10	\$0.81	17%	50%	\$30.50	0.05	0.05	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.18	0.18	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	4.19	15	\$2.21	17%	50%	\$69.67	0.06	0.06	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	New	39.07	6	\$6.05	26%	45%	\$33.51	0.23	0.23	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	42.30	10	\$14.89	25%	45%	\$55.80	0.36	0.36	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	1.35	10	\$0.57	10%	50%	\$66.96	0.09	0.09	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.75	10	\$0.20	6%	25%	\$42.78	0.02	0.02	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	11.24	12	\$2.50	16%	25%	\$32.57	0.20	0.20	2015-mdu-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	3.00	10	\$0.75	16%	36%	\$39.79	0.09	0.09	DRV_SYNBELT-Motors-7PLN-v5-1

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Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	New	1,143.38	10	\$142.20	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	New	1,672.98	15	\$384.34	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	213.27	10	\$604.92	0%	0%	\$449.79	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	540.83	1	\$54.66	0%	0%	\$95.77	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	209.66	2	\$14.74	0%	0%	\$35.72	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	9.14	15	\$4.37	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	70.42	15	\$9.13	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	84.56	15	\$10.92	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	New	5.95	10	\$59.54	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	4.95	15	\$0.04	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	2.71	15	\$0.26	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	1.65	15	\$0.31	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	1.65	15	\$0.98	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.62	15	\$0.14	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	1.24	15	\$0.65	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	1.24	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	63.25	10	\$14.88	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	65.51	10	\$1.11	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	42.00	10	\$4.55	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	6.89	10	\$3.56	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	5.52	10	\$1.17	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	5.52	10	\$0.48	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	112.95	10	\$11.10	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	0.06	5	\$0.01	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1.01	1	\$0.04	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	4.89	10	\$4.80	15%	15%	\$18.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	19.87	10	\$4.80	15%	15%	\$18.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	0.68	10	\$4.80	15%	15%	\$18.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	1.84	10	\$4.80	15%	15%	\$18.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	0.47	10	\$4.80	15%	15%	\$18.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	9.00	10	\$4.80	15%	15%	\$18.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	2.76	10	\$4.80	15%	15%	\$18.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	1.63	10	\$4.80	15%	15%	\$18.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	14.13	3	\$232.27	3%	11%	\$701.87	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Heating	Strategic Energy Management	employee	New	57.41	3	\$232.27	3%	11%	\$701.87	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	1.96	3	\$232.27	3%	11%	\$701.87	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	5.31	3	\$232.27	3%	11%	\$701.87	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	1.35	3	\$232.27	3%	11%	\$701.87	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	New	25.99	3	\$232.27	3%	11%	\$701.87	0.00	0.00	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	New	7.97	3	\$232.27	3%	11%	\$701.87	0.00	0.00	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	4.70	3	\$232.27	3%	11%	\$701.87	0.00	0.00	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	New	6.12	3	\$23.24	5%	39%	\$156.62	0.02	0.03	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	New	1.56	3	\$23.24	5%	39%	\$156.62	0.01	0.01	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	New	29.98	3	\$23.24	5%	39%	\$156.62	0.17	0.17	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	New	9.20	3	\$23.24	5%	39%	\$156.62	0.06	0.06	IND_SEM-Lighting-AEG-1

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Industrial Machinery	Miscellaneous	Commissioning	employee	New	5.43	3	\$23.24	5%	39%	\$156.62	0.02	0.02	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	6.12	3	\$14.75	0%	0%	\$99.43	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	1.56	3	\$14.75	0%	0%	\$99.43	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	New	29.98	3	\$14.75	0%	0%	\$99.43	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	New	9.20	3	\$14.75	0%	0%	\$99.43	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	5.43	3	\$14.75	0%	0%	\$99.43	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	New	1.90	12	\$1.04	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	31.68	11	\$24.69	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Industrial Machinery	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.45	0.46	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	1.74	1.74	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.36	0.36	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.18	0.18	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.07	0.07	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	1.16	1.16	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.24	0.24	Building Energy Simulation Tool

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Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.06	0.06	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.16	0.16	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.14	0.14	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	1.13	1.15	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.55	0.56	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.10	0.10	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.43	0.45	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.04	5	\$0.40	18%	30%	\$2,477.85	0.53	0.55	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.12	0.12	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	2.14	2.21	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	15.96	16.00	HVLS-Heating-AEG-1

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Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.25	0.26	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.96	0.98	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	3.69	3.70	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.76	0.77	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.08	15	\$0.36	7%	33%	\$670.63	16.71	17.83	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.11	15	\$0.60	7%	33%	\$790.38	23.39	24.96	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.08	0.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	2.22	2.88	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	2.27	2.95	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	3.79	4.13	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	5.53	6.02	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	3.78	4.12	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	7,354.64	20	\$2,528.56	15%	20%	\$40.46	32.72	32.72	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	5.65	15	\$5.66	20%	50%	\$131.99	1.11	1.11	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	9.04	15	\$3.96	20%	50%	\$57.74	1.77	1.77	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	243.67	10	\$35.73	9%	38%	\$55.26	45.72	45.72	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	182.75	12	\$54.45	9%	38%	(\$20.41)	33.40	33.40	PUMP_SYSOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	182.75	10	\$56.75	9%	38%	\$49.25	33.40	33.40	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	98.75	10	\$9.93	9%	38%	\$47.96	18.53	18.53	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	116.71	10	\$16.43	9%	38%	\$19.12	21.33	21.33	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	179.55	10	\$82.82	9%	38%	\$73.14	32.81	32.81	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	161.69	10	\$12.14	17%	50%	\$38.58	35.40	35.40	CMPAIR_EQPT-Motors-7PLN-v5-2

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	2.60	2.60	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.18	0.18	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	184.79	10	\$19.99	9%	15%	\$17.16	7.11	7.11	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	36.96	10	\$8.68	9%	38%	\$6.29	6.75	6.75	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	92.40	10	\$8.72	18%	75%	\$41.65	34.68	34.68	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	69.30	15	\$53.31	26%	45%	\$101.34	8.44	8.44	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.31	10	\$0.82	17%	50%	\$56.20	0.51	0.51	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	13.86	10	\$2.67	17%	50%	\$30.50	3.03	3.03	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	8.59	8.59	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	13.86	15	\$7.33	17%	50%	\$69.67	3.03	3.03	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	Existing	129.35	6	\$20.02	26%	45%	\$33.51	15.76	15.76	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,163.86	10	\$409.55	25%	45%	\$55.80	149.26	149.26	MATHAND_VSD-Material Handling-7PLN-v5-2

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Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	16.00	10	\$6.76	10%	50%	\$66.96	20.52	20.52	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	8.89	10	\$2.40	6%	25%	\$42.78	5.41	5.41	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	133.31	12	\$29.65	16%	25%	\$32.57	40.60	40.60	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	35.55	10	\$8.92	16%	36%	\$39.79	23.35	23.35	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	3,128.41	10	\$389.07	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	4,577.43	15	\$1,051.60	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,845.36	10	\$604.92	0%	0%	\$51.98	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,479.75	1	\$54.66	0%	0%	\$35.00	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	573.64	2	\$14.74	0%	0%	\$13.06	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	37.67	15	\$18.02	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	93.51	15	\$12.13	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	355.08	15	\$45.87	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	Existing	103.03	10	\$1,030.26	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	35.03	15	\$0.27	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	11.17	15	\$1.07	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	6.78	15	\$1.29	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	6.78	15	\$4.04	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	4.38	15	\$0.96	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	8.76	15	\$4.63	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	8.76	15	\$0.09	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	1,740.14	10	\$409.31	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,802.29	10	\$30.65	15%	75%	(\$61.90)	693.42	693.42	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	456.98	10	\$49.49	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	49.33	10	\$25.46	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1

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Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	39.51	10	\$8.39	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	39.51	10	\$3.44	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	3,107.39	10	\$305.44	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	0.44	5	\$0.06	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	27.74	1	\$1.17	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	8.20	10	\$25.47	15%	15%	\$18.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	35.50	10	\$25.47	15%	15%	\$18.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	1.23	10	\$25.47	15%	15%	\$18.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	9.59	10	\$25.47	15%	15%	\$18.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.23	10	\$25.47	15%	15%	\$18.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	133.31	10	\$25.47	15%	15%	\$18.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	19.75	10	\$25.47	15%	15%	\$18.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	9.06	10	\$25.47	15%	15%	\$18.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	23.69	3	\$1,231.52	3%	11%	\$701.07	0.53	0.54	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	102.56	3	\$1,231.52	3%	11%	\$701.07	2.14	2.14	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	3.54	3	\$1,231.52	3%	11%	\$701.07	0.44	0.44	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	27.72	3	\$1,231.52	3%	11%	\$701.07	2.88	3.14	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	6.44	3	\$1,231.52	3%	11%	\$701.07	0.73	0.77	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	385.11	3	\$1,231.52	3%	11%	\$701.07	49.13	49.13	IND_SEM-Motors-AEG-1
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	57.07	3	\$1,231.52	3%	11%	\$701.07	7.28	7.28	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	26.18	3	\$1,231.52	3%	11%	\$701.07	5.76	4.48	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	31.98	3	\$262.34	0%	0%	\$162.28	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	7.44	3	\$262.34	0%	0%	\$162.28	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	Existing	444.35	3	\$262.34	0%	0%	\$162.28	0.00	0.00	IND_SEM-HVAC-AEG-1

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Lumber Wood Products	Process	Commissioning	employee	Existing	65.85	3	\$262.34	0%	0%	\$162.28	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	30.21	3	\$262.34	0%	0%	\$162.28	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	31.98	3	\$166.54	10%	35%	\$103.02	3.95	4.31	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	7.44	3	\$166.54	10%	35%	\$103.02	1.00	1.05	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	444.35	3	\$166.54	10%	35%	\$103.02	67.48	67.48	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	Existing	65.85	3	\$166.54	10%	35%	\$103.02	10.00	10.00	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	30.21	3	\$166.54	10%	35%	\$103.02	7.91	6.15	IND_RCX-Process-AEG-1
Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	32.92	12	\$17.96	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	548.25	11	\$427.21	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

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Lumber Wood Products	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.23	0.23	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.79	0.79	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.17	0.17	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.09	0.09	Building Energy Simulation Tool

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Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.53	0.53	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.11	0.11	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.07	0.07	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.04	0.04	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.38	0.38	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.18	0.18	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.03	0.03	CHLR_VSPMP-Cooling-SCE-17_R0-86

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Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.13	0.13	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.04	5	\$0.40	18%	30%	\$2,293.97	0.09	0.09	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.04	0.04	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.77	0.77	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	5.25	5.25	HVLS-Heating-AEG-1
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.14	0.14	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.48	0.48	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.10	0.10	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.36	22%	41%	\$742.25	9.20	9.30	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.09	15	\$0.60	22%	41%	\$874.80	12.88	13.02	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.88	0.97	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	1.03	1.13	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.96	0.98	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.76	0.78	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.79	0.81	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	7,354.64	20	\$2,528.56	15%	20%	\$40.46	11.99	11.99	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	5.65	15	\$5.66	20%	50%	\$131.99	0.36	0.36	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	9.04	15	\$3.96	20%	50%	\$57.74	0.57	0.57	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	243.67	10	\$35.73	9%	38%	\$55.26	12.49	12.49	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	182.75	12	\$54.45	9%	38%	(\$20.41)	11.77	11.77	PUMP_SYSOPT-Motors-UN-v1.0-5

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Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	182.75	10	\$56.75	9%	38%	\$49.25	10.86	10.86	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	98.75	10	\$9.93	9%	38%	\$47.96	5.06	5.06	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	116.71	10	\$16.43	9%	38%	\$19.12	6.94	6.94	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	179.55	10	\$82.82	9%	38%	\$73.14	10.67	10.67	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	161.69	10	\$12.14	17%	50%	\$38.58	9.67	9.67	CMPAIR_EQPT-Motors-7PLN-v5-2
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.97	0.97	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.05	0.05	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	184.79	10	\$19.99	9%	15%	\$17.16	2.31	2.31	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	36.96	10	\$8.68	9%	38%	\$6.29	2.20	2.20	CMPAIR_SYCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	92.40	10	\$8.72	18%	75%	\$41.65	9.47	9.47	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	69.30	15	\$53.31	26%	45%	\$101.34	3.14	3.14	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.31	10	\$0.82	17%	50%	\$56.20	0.14	0.14	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1

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Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	13.86	10	\$2.67	17%	50%	\$30.50	0.83	0.83	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	2.83	2.83	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	13.86	15	\$7.33	17%	50%	\$69.67	0.98	0.98	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	New	129.35	6	\$20.02	26%	45%	\$33.51	3.70	3.70	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	1,163.86	10	\$409.55	25%	45%	\$55.80	48.54	48.54	MATHAND_VSD-Material Handling-7PLN-v5-2
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	16.00	10	\$6.76	10%	50%	\$66.96	6.67	6.67	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	8.89	10	\$2.40	6%	25%	\$42.78	1.76	1.76	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	133.31	12	\$29.65	16%	25%	\$32.57	14.31	14.31	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	35.55	10	\$8.92	16%	36%	\$39.79	6.38	6.38	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	New	3,128.41	10	\$389.07	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	New	4,577.43	15	\$1,051.60	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,845.36	10	\$604.92	0%	0%	\$51.98	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1

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Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,479.75	1	\$54.66	0%	0%	\$35.00	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	573.64	2	\$14.74	0%	0%	\$13.06	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	37.67	15	\$18.02	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	93.51	15	\$12.13	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	355.08	15	\$45.87	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	New	103.03	10	\$1,030.26	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	35.03	15	\$0.27	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	11.17	15	\$1.07	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	6.78	15	\$1.29	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	6.78	15	\$4.04	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	4.38	15	\$0.96	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	8.76	15	\$4.63	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	8.76	15	\$0.09	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	1,740.14	10	\$409.31	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,802.29	10	\$30.65	15%	75%	(\$61.90)	225.49	225.49	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	456.98	10	\$49.49	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	49.33	10	\$25.46	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	39.51	10	\$8.39	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	39.51	10	\$3.44	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	3,107.39	10	\$305.44	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	0.44	5	\$0.06	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	27.74	1	\$1.17	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	8.78	10	\$25.47	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	35.66	10	\$25.47	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	1.22	10	\$25.47	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	7.85	10	\$25.47	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	2.00	10	\$25.47	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	133.31	10	\$25.47	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	19.75	10	\$25.47	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	8.91	10	\$25.47	15%	15%	\$18.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	25.35	3	\$1,231.52	3%	11%	\$702.99	0.04	0.04	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	103.01	3	\$1,231.52	3%	11%	\$702.99	0.14	0.14	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	3.51	3	\$1,231.52	3%	11%	\$702.99	0.03	0.03	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	22.67	3	\$1,231.52	3%	11%	\$702.99	0.17	0.18	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	5.79	3	\$1,231.52	3%	11%	\$702.99	0.04	0.05	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	New	385.11	3	\$1,231.52	3%	11%	\$702.99	3.08	3.08	IND_SEM-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	Strategic Energy Management	employee	New	57.07	3	\$1,231.52	3%	11%	\$702.99	0.46	0.46	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	25.73	3	\$1,231.52	3%	11%	\$702.99	0.34	0.22	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	26.16	3	\$262.34	10%	35%	\$163.71	0.38	0.39	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	6.68	3	\$262.34	10%	35%	\$163.71	0.10	0.10	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	New	444.35	3	\$262.34	10%	35%	\$163.71	11.16	11.16	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Process	Commissioning	employee	New	65.85	3	\$262.34	10%	35%	\$163.71	1.65	1.65	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	29.69	3	\$262.34	10%	35%	\$163.71	0.46	0.38	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	26.16	3	\$166.54	0%	0%	\$103.93	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	6.68	3	\$166.54	0%	0%	\$103.93	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	New	444.35	3	\$166.54	0%	0%	\$103.93	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	New	65.85	3	\$166.54	0%	0%	\$103.93	0.00	0.00	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	29.69	3	\$166.54	0%	0%	\$103.93	0.00	0.00	IND_RCX-Process-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	32.92	12	\$17.96	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	548.25	11	\$427.21	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.07	0.07	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.05	0.05	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.01	0.01	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.05	0.05	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.02	0.02	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.02	0.02	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.01	5	\$0.40	18%	30%	\$17,656.12	0.02	0.02	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.09	0.09	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	0.68	0.68	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.04	0.04	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	0.16	0.16	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.03	0.03	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.01	15	\$0.36	7%	33%	\$4,778.61	0.44	0.47	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.02	15	\$0.60	7%	33%	\$5,631.93	0.62	0.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSrch-11

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.06	0.08	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.06	0.08	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.10	0.11	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.15	0.16	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.10	0.11	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	708.95	20	\$243.74	15%	20%	\$40.46	0.55	0.55	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.84	15	\$0.84	20%	50%	\$131.99	0.06	0.06	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	1.34	15	\$0.59	20%	50%	\$57.74	0.09	0.09	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	8.70	10	\$1.28	9%	38%	\$55.26	0.57	0.57	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	6.52	12	\$1.94	9%	38%	(\$20.41)	0.42	0.42	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	6.52	10	\$2.03	9%	38%	\$49.25	0.42	0.42	PUMP_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	2.28	10	\$0.23	9%	38%	\$47.96	0.15	0.15	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	2.70	10	\$0.38	9%	38%	\$19.12	0.17	0.17	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	4.15	10	\$1.92	9%	38%	\$73.14	0.27	0.27	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	15.37	10	\$1.15	17%	50%	\$38.58	1.18	1.18	CMPAIR_EQPT-Motors-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.09	0.09	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	17.57	10	\$1.90	9%	15%	\$17.16	0.24	0.24	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	3.51	10	\$0.83	9%	38%	\$6.29	0.23	0.23	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	8.78	10	\$0.83	18%	75%	\$41.65	1.16	1.16	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	6.59	15	\$5.07	26%	45%	\$101.34	0.28	0.28	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.22	10	\$0.08	17%	50%	\$56.20	0.02	0.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1.32	10	\$0.25	17%	50%	\$30.50	0.10	0.10	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.29	0.29	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1.32	15	\$0.70	17%	50%	\$69.67	0.10	0.10	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	12.30	6	\$1.90	26%	45%	\$33.51	0.53	0.53	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	39.73	10	\$13.98	25%	45%	\$55.80	1.79	1.79	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.59	10	\$0.25	10%	50%	\$66.96	0.26	0.26	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.33	10	\$0.09	6%	25%	\$42.78	0.07	0.07	MTR_GRWND>100HP-Motors-7PLN-v5-25

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	4.89	12	\$1.09	16%	25%	\$32.57	0.52	0.52	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	1.30	10	\$0.33	16%	36%	\$39.79	0.30	0.30	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	301.56	10	\$37.50	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	441.24	15	\$101.37	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	131.71	10	\$604.92	0%	0%	\$728.33	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	142.64	1	\$54.66	0%	0%	\$363.13	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	55.30	2	\$14.74	0%	0%	\$135.45	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	5.59	15	\$2.67	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	30.38	15	\$3.94	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	85.41	15	\$11.03	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	3.68	10	\$36.77	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	8.51	15	\$0.06	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	1.66	15	\$0.16	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	1.01	15	\$0.19	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	1.01	15	\$0.60	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.06	15	\$0.23	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	2.13	15	\$1.12	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	2.13	15	\$0.02	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	59.40	10	\$13.97	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	61.52	10	\$1.05	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	56.88	10	\$6.16	15%	75%	(\$2,117.06)	7.27	7.27	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	7.39	10	\$3.81	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	5.92	10	\$1.26	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	5.92	10	\$0.52	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	106.07	10	\$10.43	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.07	5	\$0.01	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.95	1	\$0.04	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	1.00	10	\$1.71	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	4.32	10	\$1.71	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.15	10	\$1.71	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.72	10	\$1.71	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.17	10	\$1.71	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	4.89	10	\$1.71	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	2.96	10	\$1.71	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.44	10	\$1.71	15%	15%	\$18.46	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	2.88	3	\$82.56	3%	11%	\$706.65	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	12.48	3	\$82.56	3%	11%	\$706.65	0.01	0.01	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	0.43	3	\$82.56	3%	11%	\$706.65	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	2.09	3	\$82.56	3%	11%	\$706.65	0.01	0.01	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.49	3	\$82.56	3%	11%	\$706.65	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	14.11	3	\$82.56	3%	11%	\$706.65	0.06	0.06	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	Existing	8.55	3	\$82.56	3%	11%	\$706.65	0.04	0.04	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	1.26	3	\$82.56	3%	11%	\$706.65	0.01	0.01	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	2.42	3	\$13.93	0%	0%	\$164.08	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	0.56	3	\$13.93	0%	0%	\$164.08	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	Existing	16.29	3	\$13.93	0%	0%	\$164.08	0.00	0.00	IND_SEM-HVAC-AEG-1

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Metal Mfg	Process	Commissioning	employee	Existing	9.87	3	\$13.93	0%	0%	\$164.08	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	1.46	3	\$13.93	0%	0%	\$164.08	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	2.42	3	\$8.84	5%	39%	\$104.16	0.14	0.16	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	0.56	3	\$8.84	5%	39%	\$104.16	0.04	0.04	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	Existing	16.29	3	\$8.84	5%	39%	\$104.16	1.18	1.18	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	Existing	9.87	3	\$8.84	5%	39%	\$104.16	0.71	0.71	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	1.46	3	\$8.84	5%	39%	\$104.16	0.18	0.14	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	1.17	12	\$0.64	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	19.57	11	\$15.25	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.56	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.56	0.03	0.03	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.56	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,270.95	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.00	0.00	Building Energy Simulation Tool

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Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.00	0.00	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	0.02	0.02	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	0.01	0.01	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	0.01	0.01	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.01	5	\$0.40	18%	30%	\$16,345.82	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,494.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.19	0.03	0.03	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.19	0.22	0.22	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.81	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.17	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.17	0.02	0.02	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.17	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.01	15	\$0.36	22%	41%	\$5,288.97	0.24	0.25	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.01	15	\$0.60	22%	41%	\$6,233.42	0.34	0.35	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.87	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.20	0.02	0.03	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,292.85	0.03	0.03	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$102.03	0.03	0.03	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$113.22	0.02	0.02	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,051.01	0.02	0.02	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	708.95	20	\$243.74	15%	20%	\$40.46	0.20	0.20	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	0.84	15	\$0.84	20%	50%	\$131.99	0.02	0.02	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	1.34	15	\$0.59	20%	50%	\$57.74	0.03	0.03	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	8.70	10	\$1.28	9%	38%	\$55.26	0.16	0.16	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	6.52	12	\$1.94	9%	38%	(\$20.41)	0.15	0.15	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	6.52	10	\$2.03	9%	38%	\$49.25	0.14	0.14	PUMP_VSD-Motors-UN-v1.0-3

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Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	2.28	10	\$0.23	9%	38%	\$47.96	0.04	0.04	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	2.70	10	\$0.38	9%	38%	\$19.12	0.06	0.06	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	4.15	10	\$1.92	9%	38%	\$73.14	0.09	0.09	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	15.37	10	\$1.15	17%	50%	\$38.58	0.32	0.32	CMPAIR_EQPT-Motors-7PLN-v5-2
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	0.03	0.03	CMPAIR_HTCPMDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	17.57	10	\$1.90	9%	15%	\$17.16	0.08	0.08	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	3.51	10	\$0.83	9%	38%	\$6.29	0.07	0.07	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	8.78	10	\$0.83	18%	75%	\$41.65	0.32	0.32	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	6.59	15	\$5.07	26%	45%	\$101.34	0.10	0.10	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.22	10	\$0.08	17%	50%	\$56.20	0.00	0.00	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1.32	10	\$0.25	17%	50%	\$30.50	0.03	0.03	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	0.09	0.09	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1.32	15	\$0.70	17%	50%	\$69.67	0.03	0.03	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	New	12.30	6	\$1.90	26%	45%	\$33.51	0.12	0.12	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	39.73	10	\$13.98	25%	45%	\$55.80	0.58	0.58	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.59	10	\$0.25	10%	50%	\$66.96	0.09	0.09	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.33	10	\$0.09	6%	25%	\$42.78	0.02	0.02	MTR_GRWND>100HP-Motors-7PLN-v5-25
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	4.89	12	\$1.09	16%	25%	\$32.57	0.18	0.18	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	1.30	10	\$0.33	16%	36%	\$39.79	0.08	0.08	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	301.56	10	\$37.50	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	441.24	15	\$101.37	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	131.71	10	\$604.92	0%	0%	\$728.33	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	142.64	1	\$54.66	0%	0%	\$363.13	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	55.30	2	\$14.74	0%	0%	\$135.45	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	5.59	15	\$2.67	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.38	15	\$3.94	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	85.41	15	\$11.03	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	New	3.68	10	\$36.77	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	8.51	15	\$0.06	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	1.66	15	\$0.16	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	1.01	15	\$0.19	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	1.01	15	\$0.60	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.06	15	\$0.23	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	2.13	15	\$1.12	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	2.13	15	\$0.02	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	59.40	10	\$13.97	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	61.52	10	\$1.05	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	56.88	10	\$6.16	15%	75%	(\$2,117.06)	1.98	1.98	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	7.39	10	\$3.81	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	5.92	10	\$1.26	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	5.92	10	\$0.52	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	106.07	10	\$10.43	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	0.07	5	\$0.01	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.95	1	\$0.04	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	1.07	10	\$1.71	15%	15%	\$18.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	4.34	10	\$1.71	15%	15%	\$18.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.15	10	\$1.71	15%	15%	\$18.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	0.59	10	\$1.71	15%	15%	\$18.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.15	10	\$1.71	15%	15%	\$18.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	4.89	10	\$1.71	15%	15%	\$18.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	New	2.96	10	\$1.71	15%	15%	\$18.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	0.43	10	\$1.71	15%	15%	\$18.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	New	3.09	3	\$82.56	3%	11%	\$705.91	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	New	12.54	3	\$82.56	3%	11%	\$705.91	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	0.43	3	\$82.56	3%	11%	\$705.91	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	1.71	3	\$82.56	3%	11%	\$705.91	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.44	3	\$82.56	3%	11%	\$705.91	0.00	0.00	IND_SEM-Lighting-AEG-1

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Metal Mfg	Motors	Strategic Energy Management	employee	New	14.11	3	\$82.56	3%	11%	\$705.91	0.00	0.00	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	New	8.55	3	\$82.56	3%	11%	\$705.91	0.00	0.00	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	1.24	3	\$82.56	3%	11%	\$705.91	0.00	0.00	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	New	1.98	3	\$13.93	5%	39%	\$165.85	0.01	0.01	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	New	0.50	3	\$13.93	5%	39%	\$165.85	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	New	16.29	3	\$13.93	5%	39%	\$165.85	0.19	0.19	IND_SEM-HVAC-AEG-1
Metal Mfg	Process	Commissioning	employee	New	9.87	3	\$13.93	5%	39%	\$165.85	0.12	0.12	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	New	1.43	3	\$13.93	5%	39%	\$165.85	0.01	0.01	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	1.98	3	\$8.84	0%	0%	\$105.28	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	0.50	3	\$8.84	0%	0%	\$105.28	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	New	16.29	3	\$8.84	0%	0%	\$105.28	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	New	9.87	3	\$8.84	0%	0%	\$105.28	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	1.43	3	\$8.84	0%	0%	\$105.28	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	1.17	12	\$0.64	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	19.57	11	\$15.25	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$124.17	0.14	0.14	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$124.17	0.54	0.55	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$124.17	0.11	0.11	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,346.51	0.06	0.06	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,346.51	0.02	0.02	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,346.51	0.00	0.00	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$43.72	0.00	0.00	Building Energy Simulation Tool

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Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$43.72	0.36	0.36	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$43.72	0.07	0.08	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$2.04	0.02	0.02	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$2.04	0.05	0.05	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$2.04	0.01	0.01	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$34.58	0.04	0.04	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.26	15	\$0.37	15%	60%	\$195.05	0.35	0.36	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.09	15	\$0.04	15%	75%	\$56.98	0.17	0.18	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,056.65	0.03	0.03	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.26	0.14	0.14	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.00	5	\$0.40	18%	30%	\$80,424.26	0.17	0.17	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,612.69	0.04	0.04	VENT_DCV-Ventilation-7PLN-v5-5
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$56.04	0.67	0.69	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$56.04	5.01	5.02	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,415.25	0.08	0.08	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.29	5	\$0.75	5%	15%	\$122.74	0.30	0.31	STAT_WIFI-All-7PLN-v2-1

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Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$122.74	1.16	1.16	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$122.74	0.24	0.24	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.36	7%	33%	\$21,766.72	2.37	2.53	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.60	7%	33%	\$25,653.63	3.32	3.54	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$14.39	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$11.58	0.31	0.41	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$6,661.19	0.32	0.42	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$97.32	0.54	0.59	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$108.00	0.78	0.85	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,772.19	0.54	0.58	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,106.46	20	\$380.41	15%	20%	\$40.46	2.85	2.85	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	2.63	15	\$2.63	20%	50%	\$131.99	0.30	0.30	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	4.20	15	\$1.84	20%	50%	\$57.74	0.48	0.48	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	18.43	10	\$2.70	9%	38%	\$55.26	2.00	2.00	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	13.82	12	\$4.12	9%	38%	(\$20.41)	1.46	1.46	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	13.82	10	\$4.29	9%	38%	\$49.25	1.46	1.46	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	6.72	10	\$0.68	9%	38%	\$47.96	0.73	0.73	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	7.94	10	\$1.12	9%	38%	\$19.12	0.84	0.84	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	12.22	10	\$5.64	9%	38%	\$73.14	1.29	1.29	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	22.60	10	\$1.70	17%	50%	\$38.58	2.86	2.86	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$235.74	0.21	0.21	CMPAIR_HTCPMDESDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$630.59	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	25.83	10	\$2.79	9%	15%	\$17.16	0.57	0.57	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	5.17	10	\$1.21	9%	38%	\$6.29	0.55	0.55	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	12.91	10	\$1.22	18%	75%	\$41.65	2.80	2.80	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	9.68	15	\$7.45	26%	45%	\$101.34	0.68	0.68	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.32	10	\$0.11	17%	50%	\$56.20	0.04	0.04	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1

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Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1.94	10	\$0.37	17%	50%	\$30.50	0.25	0.25	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.59	0.69	0.69	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1.94	15	\$1.02	17%	50%	\$69.67	0.25	0.25	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	18.08	6	\$2.80	26%	45%	\$33.51	1.27	1.27	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	32.26	10	\$11.35	25%	45%	\$55.80	2.39	2.39	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.75	10	\$0.32	10%	50%	\$66.96	0.55	0.55	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.42	10	\$0.11	6%	25%	\$42.78	0.15	0.15	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	6.23	12	\$1.38	16%	25%	\$32.57	1.10	1.10	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	1.66	10	\$0.42	16%	36%	\$39.79	0.63	0.63	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	470.65	10	\$58.53	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	688.64	15	\$158.21	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	139.57	10	\$604.92	0%	0%	\$687.31	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	222.62	1	\$54.66	0%	0%	\$232.67	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	86.30	2	\$14.74	0%	0%	\$86.79	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	17.51	15	\$8.38	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	30.26	15	\$3.92	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	57.76	15	\$7.46	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	7.79	10	\$77.92	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	5.39	15	\$0.04	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	5.19	15	\$0.50	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	3.15	15	\$0.60	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	3.15	15	\$1.88	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.67	15	\$0.15	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	1.35	15	\$0.71	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	1.35	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	48.23	10	\$11.34	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	49.95	10	\$0.85	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	60.04	10	\$6.50	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	8.67	10	\$4.48	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	6.95	10	\$1.47	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	6.95	10	\$0.60	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	86.12	10	\$8.47	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.08	5	\$0.01	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.77	1	\$0.03	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	4.45	10	\$4.47	15%	15%	\$18.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	19.27	10	\$4.47	15%	15%	\$18.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.67	10	\$4.47	15%	15%	\$18.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.35	10	\$4.47	15%	15%	\$18.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.55	10	\$4.47	15%	15%	\$18.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	6.23	10	\$4.47	15%	15%	\$18.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	3.47	10	\$4.47	15%	15%	\$18.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.36	10	\$4.47	15%	15%	\$18.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	12.86	3	\$216.31	3%	11%	\$707.83	0.02	0.02	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	55.66	3	\$216.31	3%	11%	\$707.83	0.06	0.06	IND_SEM-HVAC-AEG-1

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Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	1.92	3	\$216.31	3%	11%	\$707.83	0.01	0.01	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	6.80	3	\$216.31	3%	11%	\$707.83	0.04	0.04	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	1.58	3	\$216.31	3%	11%	\$707.83	0.01	0.01	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	17.99	3	\$216.31	3%	11%	\$707.83	0.13	0.13	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	10.04	3	\$216.31	3%	11%	\$707.83	0.07	0.07	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	3.94	3	\$216.31	3%	11%	\$707.83	0.05	0.04	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	7.84	3	\$20.20	0%	0%	\$155.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	1.82	3	\$20.20	0%	0%	\$155.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	Existing	20.75	3	\$20.20	0%	0%	\$155.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	Existing	11.58	3	\$20.20	0%	0%	\$155.50	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	4.55	3	\$20.20	0%	0%	\$155.50	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	7.84	3	\$12.83	5%	39%	\$98.71	0.76	0.83	IND_RCX-Motors-AEG-1
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	1.82	3	\$12.83	5%	39%	\$98.71	0.19	0.20	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	20.75	3	\$12.83	5%	39%	\$98.71	2.48	2.48	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	Existing	11.58	3	\$12.83	5%	39%	\$98.71	1.38	1.38	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	4.55	3	\$12.83	5%	39%	\$98.71	0.94	0.73	IND_RCX-Process-AEG-1

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Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	2.49	12	\$1.36	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	41.47	11	\$32.31	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$121.72	3.65	3.65	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$121.72	12.88	12.88	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$121.72	2.69	2.69	Building Energy Simulation Tool

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Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,276.79	1.42	1.42	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,276.79	0.54	0.54	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,276.79	0.11	0.11	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$43.40	0.03	0.03	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$43.40	8.59	8.59	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$43.40	1.79	1.79	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.99	0.44	0.44	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.99	1.15	1.15	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.99	0.24	0.24	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$33.65	0.79	0.79	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.26	15	\$0.37	15%	60%	\$189.83	7.35	7.35	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.09	15	\$0.04	15%	75%	\$55.46	3.57	3.57	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$1,019.18	0.64	0.64	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.79	2.59	2.59	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.00	5	\$0.40	18%	30%	\$75,005.72	2.12	2.12	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$10,486.83	0.76	0.76	VENT_DCV-Ventilation-7PLN-v5-5

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Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$55.24	14.86	14.87	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$55.24	101.68	101.68	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,299.66	0.66	0.66	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.31	5	\$0.75	5%	15%	\$120.32	2.07	2.07	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$120.32	7.30	7.30	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$120.32	1.52	1.52	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.36	22%	41%	\$24,090.39	1.31	1.32	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.60	22%	41%	\$28,392.25	1.83	1.85	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$15.88	0.19	0.19	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$9.03	8.30	8.90	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$5,195.19	9.15	9.81	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$101.64	9.19	9.42	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$112.79	7.48	7.66	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$6,028.32	8.06	8.26	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,106.46	20	\$380.41	15%	20%	\$40.46	61.43	61.43	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	2.63	15	\$2.63	20%	50%	\$131.99	5.95	5.95	RFG_FHPC-Refrigeration-RTF-v1.3-23
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	4.20	15	\$1.84	20%	50%	\$57.74	9.52	9.52	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	18.43	10	\$2.70	9%	38%	\$55.26	35.99	35.99	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	13.82	12	\$4.12	9%	38%	(\$20.41)	31.62	31.62	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	13.82	10	\$4.29	9%	38%	\$49.25	29.00	29.00	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	6.72	10	\$0.68	9%	38%	\$47.96	13.12	13.12	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	7.94	10	\$1.12	9%	38%	\$19.12	16.66	16.66	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	12.22	10	\$5.64	9%	38%	\$73.14	25.63	25.63	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	22.60	10	\$1.70	17%	50%	\$38.58	51.49	51.49	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$235.74	4.65	4.65	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$630.59	0.26	0.26	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	25.83	10	\$2.79	9%	15%	\$17.16	11.41	11.41	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	5.17	10	\$1.21	9%	38%	\$6.29	10.84	10.84	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	12.91	10	\$1.22	18%	75%	\$41.65	50.44	50.44	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	9.68	15	\$7.45	26%	45%	\$101.34	15.14	15.14	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.32	10	\$0.11	17%	50%	\$56.20	0.74	0.74	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1.94	10	\$0.37	17%	50%	\$30.50	4.41	4.41	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.59	13.90	13.90	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1.94	15	\$1.02	17%	50%	\$69.67	4.90	4.90	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	New	18.08	6	\$2.80	26%	45%	\$33.51	17.70	17.70	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	32.26	10	\$11.35	25%	45%	\$55.80	47.49	47.49	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.75	10	\$0.32	10%	50%	\$66.96	11.00	11.00	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.42	10	\$0.11	6%	25%	\$42.78	2.90	2.90	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	6.23	12	\$1.38	16%	25%	\$32.57	23.74	23.74	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	1.66	10	\$0.42	16%	36%	\$39.79	11.35	11.35	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	470.65	10	\$58.53	0%	0%	\$19.72	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	688.64	15	\$158.21	0%	0%	\$30.26	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	139.57	10	\$604.92	0%	0%	\$687.31	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	222.62	1	\$54.66	0%	0%	\$232.67	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	86.30	2	\$14.74	0%	0%	\$86.79	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	17.51	15	\$8.38	0%	0%	\$63.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.26	15	\$3.92	0%	0%	\$17.08	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	57.76	15	\$7.46	0%	0%	\$17.02	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	New	7.79	10	\$77.92	0%	0%	\$1,585.81	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	5.39	15	\$0.04	0%	0%	\$1.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	5.19	15	\$0.50	0%	0%	\$12.58	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	3.15	15	\$0.60	0%	0%	\$25.02	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	3.15	15	\$1.88	0%	0%	(\$57.09)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.67	15	\$0.15	0%	0%	\$28.85	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	1.35	15	\$0.71	0%	0%	(\$78.66)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	1.35	15	\$0.01	0%	0%	(\$14.14)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	48.23	10	\$11.34	0%	0%	\$37.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	49.95	10	\$0.85	0%	0%	(\$61.90)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	60.04	10	\$6.50	0%	0%	(\$2,117.06)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	8.67	10	\$4.48	0%	0%	\$81.85	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	6.95	10	\$1.47	0%	0%	\$33.66	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	6.95	10	\$0.60	0%	0%	\$13.80	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	86.12	10	\$8.47	0%	0%	\$15.59	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	0.08	5	\$0.01	0%	0%	\$32.58	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.77	1	\$0.03	0%	0%	\$39.81	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	4.76	10	\$4.47	15%	15%	\$18.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	19.35	10	\$4.47	15%	15%	\$18.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.66	10	\$4.47	15%	15%	\$18.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	1.93	10	\$4.47	15%	15%	\$18.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.49	10	\$4.47	15%	15%	\$18.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	6.23	10	\$4.47	15%	15%	\$18.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	3.47	10	\$4.47	15%	15%	\$18.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	1.34	10	\$4.47	15%	15%	\$18.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	13.76	3	\$216.31	3%	11%	\$704.86	0.06	0.06	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	New	55.90	3	\$216.31	3%	11%	\$704.86	0.24	0.24	IND_SEM-HVAC-AEG-1
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	1.91	3	\$216.31	3%	11%	\$704.86	0.05	0.05	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	5.56	3	\$216.31	3%	11%	\$704.86	0.14	0.14	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	1.42	3	\$216.31	3%	11%	\$704.86	0.04	0.04	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	New	17.99	3	\$216.31	3%	11%	\$704.86	0.47	0.47	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	New	10.04	3	\$216.31	3%	11%	\$704.86	0.26	0.26	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	3.87	3	\$216.31	3%	11%	\$704.86	0.16	0.11	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	New	6.42	3	\$20.20	5%	39%	\$159.04	0.07	0.07	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	1.64	3	\$20.20	5%	39%	\$159.04	0.02	0.02	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	New	20.75	3	\$20.20	5%	39%	\$159.04	0.41	0.41	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	New	11.58	3	\$20.20	5%	39%	\$159.04	0.23	0.23	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	New	4.47	3	\$20.20	5%	39%	\$159.04	0.05	0.05	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	6.42	3	\$12.83	0%	0%	\$100.96	0.00	0.00	IND_RCX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	1.64	3	\$12.83	0%	0%	\$100.96	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	New	20.75	3	\$12.83	0%	0%	\$100.96	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	New	11.58	3	\$12.83	0%	0%	\$100.96	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	4.47	3	\$12.83	0%	0%	\$100.96	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	2.49	12	\$1.36	0%	0%	\$50.30	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$41.97	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	41.47	11	\$32.31	0%	0%	\$119.37	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Idaho Industrial Measures Assumptions

Table I-12 Summary of Industrial Measure Assumptions in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.99	20	\$0.11	3%	100%	\$9.85	36.41	36.41	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.34	25	\$0.38	3%	100%	\$45.41	53.09	53.09	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	0.20	25	\$0.05	11%	100%	\$20.79	25.62	25.62	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$36.41	2.44	2.44	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.21	15	\$0.12	2%	100%	\$36.41	3.97	3.97	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	109.02	20	\$66.53	100%	100%	\$54.12	138.97	138.97	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	Existing	1.70	8	\$0.00	100%	100%	\$0.02	17.05	19.73	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	Existing	39.08	15	\$0.00	100%	100%	\$0.00	568.55	526.07	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	1.38	17	\$0.02	100%	100%	\$0.60	127.25	121.53	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	Existing	4.90	8	\$0.00	100%	100%	\$0.01	2.13	2.02	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	104.78	15	\$0.24	100%	100%	\$0.05	130.57	123.84	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	9.47	17	\$0.06	100%	100%	\$0.34	30.79	29.72	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.02	20	\$0.11	3%	100%	\$9.55	17.35	17.35	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.44	25	\$0.38	3%	100%	\$43.44	26.73	26.73	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	New	0.22	25	\$0.05	11%	100%	\$18.25	14.71	14.71	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.14	15	\$0.12	2%	100%	\$32.64	1.36	1.36	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.23	15	\$0.12	2%	100%	\$32.64	2.14	2.14	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	New	108.68	20	\$66.53	100%	100%	\$54.28	61.80	61.80	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	New	1.70	8	\$0.00	100%	100%	\$0.02	6.75	6.20	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	New	39.08	15	\$0.00	100%	100%	\$0.00	276.75	257.85	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	New	1.38	17	\$0.02	100%	100%	\$0.60	51.42	49.06	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	New	4.90	8	\$0.00	100%	100%	\$0.01	0.78	0.64	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Exterior Lighting	Area Lighting	lamps	New	104.78	15	\$0.24	100%	100%	\$0.05	64.98	61.98	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	9.47	17	\$0.06	100%	100%	\$0.34	12.65	12.21	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.97	20	\$0.22	3%	100%	\$9.85	5.55	5.55	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.68	25	\$0.77	3%	100%	\$44.37	8.00	8.00	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	Existing	0.39	25	\$0.10	11%	100%	\$20.79	3.90	3.90	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.25	15	\$0.23	2%	100%	\$36.41	0.37	0.37	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.41	15	\$0.23	2%	100%	\$36.41	0.61	0.61	AEG BEST
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	Existing	218.04	20	\$133.06	100%	100%	\$54.12	21.18	21.18	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Interior Lighting	General Service Lighting	lamps	Existing	3.39	8	\$0.00	100%	100%	\$0.00	3.96	4.58	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	Existing	78.16	15	\$0.00	100%	100%	\$0.00	131.93	122.07	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	Existing	2.75	17	\$0.01	100%	100%	\$0.10	29.53	28.20	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	Existing	9.80	8	\$0.00	100%	100%	\$0.00	0.50	0.47	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	Existing	209.56	15	\$0.08	100%	100%	\$0.01	30.30	28.74	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	Existing	18.94	17	\$0.02	100%	100%	\$0.06	7.14	6.90	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.04	20	\$0.22	3%	100%	\$9.55	2.64	2.64	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.87	25	\$0.77	3%	100%	\$43.44	4.07	4.07	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	New	0.45	25	\$0.10	11%	100%	\$18.25	2.24	2.24	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.29	15	\$0.23	2%	100%	\$32.64	0.21	0.21	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.45	15	\$0.23	2%	100%	\$32.64	0.33	0.33	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	New	217.36	20	\$133.06	100%	100%	\$54.28	9.42	9.42	AEG-BEST
Mining	Interior Lighting	General Service Lighting	lamps	New	3.39	8	\$0.00	100%	100%	\$0.00	1.57	1.44	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	New	78.16	15	\$0.00	100%	100%	\$0.00	64.22	59.83	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	New	2.75	17	\$0.01	100%	100%	\$0.10	11.93	11.38	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	New	9.80	8	\$0.00	100%	100%	\$0.00	0.18	0.15	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	New	209.56	15	\$0.08	100%	100%	\$0.01	15.08	14.38	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	New	18.94	17	\$0.02	100%	100%	\$0.06	2.93	2.83	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.99	20	\$0.11	3%	100%	\$9.85	20.93	20.93	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.34	25	\$0.38	3%	100%	\$44.37	30.19	30.19	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.20	25	\$0.05	11%	100%	\$20.79	14.73	14.73	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$36.41	1.40	1.40	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.21	15	\$0.12	2%	100%	\$36.41	2.28	2.28	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	109.02	20	\$66.53	100%	100%	\$54.12	79.89	79.89	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.70	8	\$0.00	100%	100%	\$0.00	24.20	28.01	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	39.08	15	\$0.00	100%	100%	\$0.00	807.18	746.87	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.38	17	\$0.00	100%	100%	\$0.00	180.66	172.53	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	4.90	8	\$0.00	100%	100%	\$0.00	3.03	2.87	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	104.78	15	\$0.00	100%	100%	\$0.00	185.37	175.82	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	9.47	17	\$0.00	100%	100%	\$0.00	43.71	42.20	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.02	20	\$0.11	3%	100%	\$9.55	9.97	9.97	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.44	25	\$0.38	3%	100%	\$43.44	15.37	15.37	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	New	0.22	25	\$0.05	11%	100%	\$18.25	8.45	8.45	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.14	15	\$0.12	2%	100%	\$32.64	0.78	0.78	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.23	15	\$0.12	2%	100%	\$32.64	1.23	1.23	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	108.68	20	\$66.53	100%	100%	\$54.28	35.53	35.53	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	New	1.70	8	\$0.00	100%	100%	\$0.00	9.58	8.81	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	New	39.08	15	\$0.00	100%	100%	\$0.00	392.90	366.07	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	1.38	17	\$0.00	100%	100%	\$0.00	73.00	69.65	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	New	4.90	8	\$0.00	100%	100%	\$0.00	1.11	0.91	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	104.78	15	\$0.00	100%	100%	\$0.00	92.26	88.00	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	9.47	17	\$0.00	100%	100%	\$0.00	17.95	17.33	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.22	20	\$0.02	3%	100%	\$9.85	0.65	0.65	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.30	25	\$0.09	3%	100%	\$44.37	0.93	0.93	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.04	25	\$0.01	11%	100%	\$20.79	0.45	0.45	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.03	15	\$0.03	2%	100%	\$36.41	0.04	0.04	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.05	15	\$0.03	2%	100%	\$36.41	0.07	0.07	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	24.23	20	\$14.78	100%	100%	\$54.12	2.47	2.47	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.38	8	\$0.00	100%	100%	\$0.02	1.00	1.16	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	8.68	15	\$0.00	100%	100%	\$0.00	33.43	30.94	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.31	17	\$0.00	100%	100%	\$0.68	7.48	7.15	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	1.09	8	\$0.00	100%	100%	\$0.02	0.13	0.12	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	23.28	15	\$0.06	100%	100%	\$0.06	7.68	7.28	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	2.10	17	\$0.02	100%	100%	\$0.38	1.81	1.75	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.23	20	\$0.02	3%	100%	\$9.55	0.31	0.31	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.32	25	\$0.09	3%	100%	\$43.44	0.47	0.47	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	0.05	25	\$0.01	11%	100%	\$18.25	0.26	0.26	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.03	15	\$0.03	2%	100%	\$32.64	0.02	0.02	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.05	15	\$0.03	2%	100%	\$32.64	0.04	0.04	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	24.15	20	\$14.78	100%	100%	\$54.28	1.10	1.10	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	New	0.38	8	\$0.00	100%	100%	\$0.02	0.40	0.36	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	New	8.68	15	\$0.00	100%	100%	\$0.00	16.27	15.16	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	0.31	17	\$0.00	100%	100%	\$0.68	3.02	2.89	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	New	1.09	8	\$0.00	100%	100%	\$0.02	0.05	0.04	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	23.28	15	\$0.06	100%	100%	\$0.06	3.82	3.65	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	2.10	17	\$0.02	100%	100%	\$0.38	0.74	0.72	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.79	20	\$0.09	3%	100%	\$9.85	0.07	0.07	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.07	25	\$0.31	3%	100%	\$44.37	0.11	0.11	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	0.16	25	\$0.04	11%	100%	\$20.79	0.05	0.05	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.10	15	\$0.09	2%	100%	\$36.41	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.16	15	\$0.09	2%	100%	\$36.41	0.01	0.01	AEG BEST
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	87.21	20	\$53.22	100%	100%	\$54.12	0.28	0.28	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	Existing	1.36	8	\$0.02	100%	100%	\$1.55	0.03	0.03	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	Existing	31.27	15	\$0.14	100%	100%	(\$0.31)	0.90	0.84	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	0.41	17	\$0.46	100%	100%	\$48.88	0.19	0.18	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	Existing	3.92	8	\$0.07	100%	100%	\$1.11	0.00	0.00	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	83.82	15	\$15.51	100%	100%	\$4.16	0.21	0.20	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	7.58	17	\$4.00	100%	100%	\$27.67	0.05	0.05	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.81	20	\$0.09	3%	100%	\$9.55	0.04	0.04	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.15	25	\$0.31	3%	100%	\$43.44	0.05	0.05	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	0.18	25	\$0.04	11%	100%	\$18.25	0.03	0.03	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.11	15	\$0.09	2%	100%	\$32.64	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.18	15	\$0.09	2%	100%	\$32.64	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	86.94	20	\$53.22	100%	100%	\$54.28	0.12	0.12	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	New	1.36	8	\$0.02	100%	100%	\$1.55	0.01	0.01	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	New	31.27	15	\$0.14	100%	100%	(\$0.31)	0.44	0.41	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	0.41	17	\$0.46	100%	100%	\$48.88	0.08	0.08	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	New	3.92	8	\$0.07	100%	100%	\$1.11	0.00	0.00	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	83.82	15	\$15.51	100%	100%	\$4.16	0.10	0.10	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	7.58	17	\$4.00	100%	100%	\$27.67	0.02	0.02	USDOE SSL Projections - 2016
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.97	20	\$0.22	3%	100%	\$9.85	3.84	3.84	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.68	25	\$0.77	3%	100%	\$44.37	5.54	5.54	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	0.39	25	\$0.10	11%	100%	\$20.79	2.70	2.70	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.25	15	\$0.23	2%	100%	\$36.41	0.26	0.26	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.41	15	\$0.23	2%	100%	\$36.41	0.42	0.42	AEG BEST
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	218.04	20	\$133.06	100%	100%	\$54.12	14.66	14.66	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	Existing	3.39	8	\$0.00	100%	100%	\$0.01	1.73	2.00	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	Existing	78.16	15	\$0.00	100%	100%	\$0.00	57.69	53.38	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	2.75	17	\$0.01	100%	100%	\$0.16	12.91	12.33	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	Existing	9.80	8	\$0.00	100%	100%	\$0.00	0.22	0.21	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	209.56	15	\$0.13	100%	100%	\$0.01	13.25	12.57	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	18.94	17	\$0.03	100%	100%	\$0.09	3.12	3.02	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.04	20	\$0.22	3%	100%	\$9.55	1.83	1.83	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.87	25	\$0.77	3%	100%	\$43.44	2.82	2.82	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	0.45	25	\$0.10	11%	100%	\$18.25	1.55	1.55	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.29	15	\$0.23	2%	100%	\$32.64	0.14	0.14	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.45	15	\$0.23	2%	100%	\$32.64	0.23	0.23	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	217.36	20	\$133.06	100%	100%	\$54.28	6.52	6.52	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	New	3.39	8	\$0.00	100%	100%	\$0.01	0.69	0.63	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	New	78.16	15	\$0.00	100%	100%	\$0.00	28.08	26.16	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	2.75	17	\$0.01	100%	100%	\$0.16	5.22	4.98	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	New	9.80	8	\$0.00	100%	100%	\$0.00	0.08	0.07	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	209.56	15	\$0.13	100%	100%	\$0.01	6.59	6.29	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	18.94	17	\$0.03	100%	100%	\$0.09	1.28	1.24	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.39	20	\$0.04	3%	100%	\$9.85	3.29	3.29	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.54	25	\$0.15	3%	100%	\$44.37	4.74	4.74	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.08	25	\$0.02	11%	100%	\$20.79	2.31	2.31	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.05	15	\$0.05	2%	100%	\$36.41	0.22	0.22	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.08	15	\$0.05	2%	100%	\$36.41	0.36	0.36	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	43.61	20	\$26.61	100%	100%	\$54.12	12.55	12.55	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.68	8	\$0.00	100%	100%	\$0.04	1.31	1.52	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	15.63	15	\$0.00	100%	100%	(\$0.01)	43.77	40.50	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.55	17	\$0.01	100%	100%	\$1.31	9.80	9.36	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	1.96	8	\$0.00	100%	100%	\$0.03	0.16	0.16	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	41.91	15	\$0.21	100%	100%	\$0.11	10.05	9.53	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	3.79	17	\$0.05	100%	100%	\$0.73	2.37	2.29	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.41	20	\$0.04	3%	100%	\$9.55	1.57	1.57	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.57	25	\$0.15	3%	100%	\$43.44	2.41	2.41	AEG BEST
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.09	25	\$0.02	11%	100%	\$18.25	1.33	1.33	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.06	15	\$0.05	2%	100%	\$32.64	0.12	0.12	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.09	15	\$0.05	2%	100%	\$32.64	0.19	0.19	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	43.47	20	\$26.61	100%	100%	\$54.28	5.58	5.58	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	0.68	8	\$0.00	100%	100%	\$0.04	0.52	0.48	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	15.63	15	\$0.00	100%	100%	(\$0.01)	21.30	19.85	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	0.58	17	\$0.01	100%	100%	\$1.85	0.62	1.03	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	1.96	8	\$0.00	100%	100%	\$0.03	0.06	0.05	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	41.91	15	\$0.21	100%	100%	\$0.11	5.00	4.77	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	4.39	17	\$0.05	100%	100%	\$0.72	0.85	0.87	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.47	20	\$0.27	3%	100%	\$9.85	1.92	1.92	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.35	25	\$0.96	3%	100%	\$44.37	2.77	2.77	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	0.49	25	\$0.13	11%	100%	\$20.79	1.35	1.35	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.32	15	\$0.29	2%	100%	\$36.41	0.13	0.13	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.51	15	\$0.29	2%	100%	\$36.41	0.21	0.21	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	272.54	20	\$166.32	100%	100%	\$54.12	7.34	7.34	AEG-BEST
Wastewater	Interior Lighting	General Service Lighting	lamps	Existing	4.24	8	\$0.00	100%	100%	\$0.01	0.98	1.14	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	Existing	97.70	15	\$0.00	100%	100%	\$0.00	32.74	30.29	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	3.44	17	\$0.01	100%	100%	\$0.16	7.33	7.00	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	Existing	12.25	8	\$0.00	100%	100%	\$0.00	0.12	0.12	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	261.95	15	\$0.16	100%	100%	\$0.01	7.52	7.13	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	23.68	17	\$0.04	100%	100%	\$0.09	1.77	1.71	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.54	20	\$0.27	3%	100%	\$9.55	0.92	0.92	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.59	25	\$0.96	3%	100%	\$43.44	1.41	1.41	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	New	0.56	25	\$0.13	11%	100%	\$18.25	0.78	0.78	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.36	15	\$0.29	2%	100%	\$32.64	0.07	0.07	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.57	15	\$0.29	2%	100%	\$32.64	0.11	0.11	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	271.70	20	\$166.32	100%	100%	\$54.28	3.26	3.26	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	General Service Lighting	lamps	New	4.24	8	\$0.00	100%	100%	\$0.01	0.39	0.36	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	New	97.70	15	\$0.00	100%	100%	\$0.00	15.94	14.85	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	New	3.44	17	\$0.01	100%	100%	\$0.16	2.96	2.83	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	New	12.25	8	\$0.00	100%	100%	\$0.00	0.04	0.04	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Area Lighting	lamps	New	261.95	15	\$0.16	100%	100%	\$0.01	3.74	3.57	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	23.68	17	\$0.04	100%	100%	\$0.09	0.73	0.70	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.47	20	\$0.27	3%	100%	\$9.85	3.72	3.72	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.35	25	\$0.96	3%	100%	\$44.37	5.37	5.37	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	Existing	0.49	25	\$0.13	11%	100%	\$20.79	2.62	2.62	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.32	15	\$0.29	2%	100%	\$36.41	0.25	0.25	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.51	15	\$0.29	2%	100%	\$36.41	0.41	0.41	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	272.54	20	\$166.32	100%	100%	\$54.12	14.21	14.21	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	Existing	4.24	8	\$0.00	100%	100%	\$0.00	1.90	2.20	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	Existing	97.70	15	\$0.00	100%	100%	\$0.00	63.42	58.68	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	Existing	3.44	17	\$0.01	100%	100%	\$0.08	14.19	13.56	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	Existing	12.25	8	\$0.00	100%	100%	\$0.00	0.24	0.23	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	Existing	261.95	15	\$0.08	100%	100%	\$0.01	14.56	13.81	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	Existing	23.68	17	\$0.02	100%	100%	\$0.05	3.43	3.32	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.54	20	\$0.27	3%	100%	\$9.55	1.77	1.77	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.59	25	\$0.96	3%	100%	\$43.44	2.73	2.73	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	New	0.56	25	\$0.13	11%	100%	\$18.25	1.50	1.50	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.36	15	\$0.29	2%	100%	\$32.64	0.14	0.14	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.57	15	\$0.29	2%	100%	\$32.64	0.22	0.22	AEG BEST
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	271.70	20	\$166.32	100%	100%	\$54.28	6.32	6.32	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	New	4.24	8	\$0.00	100%	100%	\$0.00	0.75	0.69	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	New	97.70	15	\$0.00	100%	100%	\$0.00	30.87	28.76	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	New	3.44	17	\$0.01	100%	100%	\$0.08	5.74	5.47	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	New	12.25	8	\$0.00	100%	100%	\$0.00	0.09	0.07	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	New	261.95	15	\$0.08	100%	100%	\$0.01	7.25	6.91	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	New	23.68	17	\$0.02	100%	100%	\$0.05	1.41	1.36	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.97	20	\$0.22	3%	100%	\$9.85	20.10	20.10	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.68	25	\$0.77	3%	100%	\$44.37	28.98	28.98	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.39	25	\$0.10	11%	100%	\$20.79	14.14	14.14	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.25	15	\$0.23	2%	100%	\$36.41	1.35	1.35	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.41	15	\$0.23	2%	100%	\$36.41	2.19	2.19	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	218.04	20	\$133.06	100%	100%	\$54.12	76.70	76.70	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.39	8	\$0.00	100%	100%	\$0.00	7.01	8.11	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	78.16	15	\$0.00	100%	100%	\$0.00	233.67	216.21	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.75	17	\$0.00	100%	100%	\$0.04	52.30	49.95	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	9.80	8	\$0.00	100%	100%	\$0.00	0.88	0.83	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	209.56	15	\$0.03	100%	100%	\$0.00	53.66	50.90	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	18.94	17	\$0.01	100%	100%	\$0.02	12.65	12.22	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.04	20	\$0.22	3%	100%	\$9.55	9.57	9.57	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.87	25	\$0.77	3%	100%	\$43.44	14.75	14.75	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	0.45	25	\$0.10	11%	100%	\$18.25	8.12	8.12	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.29	15	\$0.23	2%	100%	\$32.64	0.75	0.75	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.45	15	\$0.23	2%	100%	\$32.64	1.18	1.18	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	217.36	20	\$133.06	100%	100%	\$54.28	34.11	34.11	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	New	3.39	8	\$0.00	100%	100%	\$0.00	2.77	2.55	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	New	78.16	15	\$0.00	100%	100%	\$0.00	113.74	105.97	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	2.75	17	\$0.00	100%	100%	\$0.04	21.13	20.16	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	New	9.80	8	\$0.00	100%	100%	\$0.00	0.32	0.26	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	209.56	15	\$0.03	100%	100%	\$0.00	26.71	25.47	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	18.94	17	\$0.01	100%	100%	\$0.02	5.20	5.02	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.97	20	\$0.22	3%	100%	\$9.85	1.44	1.44	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.68	25	\$0.77	3%	100%	\$44.37	2.07	2.07	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.39	25	\$0.10	11%	100%	\$20.79	1.01	1.01	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.25	15	\$0.23	2%	100%	\$36.41	0.10	0.10	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.41	15	\$0.23	2%	100%	\$36.41	0.16	0.16	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	218.04	20	\$133.06	100%	100%	\$54.12	5.49	5.49	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.39	8	\$0.00	100%	100%	\$0.03	0.32	0.38	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	78.16	15	\$0.01	100%	100%	(\$0.01)	10.83	10.02	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.75	17	\$0.05	100%	100%	\$0.88	2.42	2.32	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	9.80	8	\$0.00	100%	100%	\$0.02	0.04	0.04	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	209.56	15	\$0.69	100%	100%	\$0.07	2.49	2.36	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	18.94	17	\$0.18	100%	100%	\$0.49	0.59	0.57	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.04	20	\$0.22	3%	100%	\$9.55	0.69	0.69	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.87	25	\$0.77	3%	100%	\$43.44	1.06	1.06	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.45	25	\$0.10	11%	100%	\$18.25	0.58	0.58	AEG BEST
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.29	15	\$0.23	2%	100%	\$32.64	0.05	0.05	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.45	15	\$0.23	2%	100%	\$32.64	0.08	0.08	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	217.36	20	\$133.06	100%	100%	\$54.28	2.44	2.44	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	3.39	8	\$0.00	100%	100%	\$0.03	0.13	0.12	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	78.16	15	\$0.01	100%	100%	(\$0.01)	5.27	4.91	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	2.75	17	\$0.05	100%	100%	\$0.88	0.98	0.93	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	9.80	8	\$0.00	100%	100%	\$0.02	0.01	0.01	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	209.56	15	\$0.69	100%	100%	\$0.07	1.24	1.18	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	18.94	17	\$0.18	100%	100%	\$0.49	0.24	0.23	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.99	20	\$0.11	3%	100%	\$9.85	7.65	7.65	AEG BEST
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.34	25	\$0.38	3%	100%	\$44.37	11.03	11.03	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	0.20	25	\$0.05	11%	100%	\$20.79	5.38	5.38	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$36.41	0.51	0.51	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.21	15	\$0.12	2%	100%	\$36.41	0.83	0.83	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	109.02	20	\$66.53	100%	100%	\$54.12	29.19	29.19	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	Existing	1.70	8	\$0.00	100%	100%	\$0.00	2.58	2.98	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	Existing	39.08	15	\$0.00	100%	100%	\$0.00	85.98	79.56	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	1.38	17	\$0.00	100%	100%	\$0.01	19.24	18.38	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	Existing	4.90	8	\$0.00	100%	100%	\$0.00	0.32	0.31	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	104.78	15	\$0.01	100%	100%	\$0.00	19.75	18.73	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	9.47	17	\$0.00	100%	100%	\$0.01	4.66	4.49	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.02	20	\$0.11	3%	100%	\$9.55	3.64	3.64	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.44	25	\$0.38	3%	100%	\$43.44	5.62	5.62	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	0.22	25	\$0.05	11%	100%	\$18.25	3.09	3.09	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.14	15	\$0.12	2%	100%	\$32.64	0.29	0.29	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.23	15	\$0.12	2%	100%	\$32.64	0.45	0.45	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	108.68	20	\$66.53	100%	100%	\$54.28	12.98	12.98	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	New	1.70	8	\$0.00	100%	100%	\$0.00	1.02	0.94	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	New	39.08	15	\$0.00	100%	100%	\$0.00	41.85	38.99	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	1.38	17	\$0.00	100%	100%	\$0.01	7.78	7.42	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	New	4.90	8	\$0.00	100%	100%	\$0.00	0.12	0.10	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	104.78	15	\$0.01	100%	100%	\$0.00	9.83	9.37	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	9.47	17	\$0.00	100%	100%	\$0.01	1.91	1.85	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.97	20	\$0.22	3%	100%	\$9.85	2.00	2.00	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.68	25	\$0.77	3%	100%	\$44.37	2.89	2.89	AEG BEST
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	0.39	25	\$0.10	11%	100%	\$20.79	1.41	1.41	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.25	15	\$0.23	2%	100%	\$36.41	0.13	0.13	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.41	15	\$0.23	2%	100%	\$36.41	0.22	0.22	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	218.04	20	\$133.06	100%	100%	\$54.12	7.65	7.65	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	Existing	3.39	8	\$0.00	100%	100%	\$0.00	1.61	1.86	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	Existing	78.16	15	\$0.00	100%	100%	\$0.00	53.64	49.63	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	2.75	17	\$0.00	100%	100%	\$0.09	12.01	11.47	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	Existing	9.80	8	\$0.00	100%	100%	\$0.00	0.20	0.19	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	209.56	15	\$0.07	100%	100%	\$0.01	12.32	11.68	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	18.94	17	\$0.02	100%	100%	\$0.05	2.90	2.80	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.04	20	\$0.22	3%	100%	\$9.55	0.95	0.95	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.87	25	\$0.77	3%	100%	\$43.44	1.47	1.47	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	0.45	25	\$0.10	11%	100%	\$18.25	0.81	0.81	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.29	15	\$0.23	2%	100%	\$32.64	0.07	0.07	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.45	15	\$0.23	2%	100%	\$32.64	0.12	0.12	AEG BEST
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	217.36	20	\$133.06	100%	100%	\$54.28	3.40	3.40	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	New	3.39	8	\$0.00	100%	100%	\$0.00	0.64	0.59	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	New	78.16	15	\$0.00	100%	100%	\$0.00	26.11	24.33	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	2.75	17	\$0.00	100%	100%	\$0.09	4.85	4.63	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	New	9.80	8	\$0.00	100%	100%	\$0.00	0.07	0.06	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	209.56	15	\$0.07	100%	100%	\$0.01	6.13	5.85	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	18.94	17	\$0.02	100%	100%	\$0.05	1.19	1.15	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.99	20	\$0.11	3%	100%	\$9.85	2.85	2.85	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.34	25	\$0.38	3%	100%	\$44.37	4.12	4.12	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.20	25	\$0.05	11%	100%	\$20.79	2.01	2.01	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$36.41	0.19	0.19	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.21	15	\$0.12	2%	100%	\$36.41	0.31	0.31	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	109.02	20	\$66.53	100%	100%	\$54.12	10.89	10.89	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.70	8	\$0.00	100%	100%	\$0.00	1.42	1.65	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	39.08	15	\$0.00	100%	100%	\$0.00	47.44	43.89	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.38	17	\$0.00	100%	100%	\$0.05	10.62	10.14	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	4.90	8	\$0.00	100%	100%	\$0.00	0.18	0.17	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	104.78	15	\$0.02	100%	100%	\$0.00	10.89	10.33	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	9.47	17	\$0.01	100%	100%	\$0.03	2.57	2.48	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.02	20	\$0.11	3%	100%	\$9.55	1.36	1.36	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.44	25	\$0.38	3%	100%	\$43.44	2.10	2.10	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	0.22	25	\$0.05	11%	100%	\$18.25	1.15	1.15	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.14	15	\$0.12	2%	100%	\$32.64	0.11	0.11	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.23	15	\$0.12	2%	100%	\$32.64	0.17	0.17	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	108.68	20	\$66.53	100%	100%	\$54.28	4.84	4.84	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	New	1.70	8	\$0.00	100%	100%	\$0.00	0.56	0.52	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	New	39.08	15	\$0.00	100%	100%	\$0.00	23.09	21.51	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	1.38	17	\$0.00	100%	100%	\$0.05	4.29	4.09	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	New	4.90	8	\$0.00	100%	100%	\$0.00	0.07	0.05	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	104.78	15	\$0.02	100%	100%	\$0.00	5.42	5.17	USDOE SSL Projections - 2016

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Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	9.47	17	\$0.01	100%	100%	\$0.03	1.06	1.02	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.97	20	\$0.22	3%	100%	\$9.85	21.76	21.76	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.68	25	\$0.77	3%	100%	\$44.37	31.39	31.39	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.39	25	\$0.10	11%	100%	\$20.79	15.32	15.32	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.25	15	\$0.23	2%	100%	\$36.41	1.46	1.46	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.41	15	\$0.23	2%	100%	\$36.41	2.37	2.37	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	218.04	20	\$133.06	100%	100%	\$54.12	83.07	83.07	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.39	8	\$0.00	100%	100%	\$0.00	7.90	9.14	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	78.16	15	\$0.00	100%	100%	\$0.00	263.33	243.65	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.75	17	\$0.00	100%	100%	\$0.09	58.94	56.29	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	9.80	8	\$0.00	100%	100%	\$0.00	0.99	0.94	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	209.56	15	\$0.07	100%	100%	\$0.01	60.47	57.36	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	18.94	17	\$0.02	100%	100%	\$0.05	14.26	13.77	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.04	20	\$0.22	3%	100%	\$9.55	10.37	10.37	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.87	25	\$0.77	3%	100%	\$43.44	15.98	15.98	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	0.45	25	\$0.10	11%	100%	\$18.25	8.79	8.79	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.29	15	\$0.23	2%	100%	\$32.64	0.81	0.81	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.45	15	\$0.23	2%	100%	\$32.64	1.28	1.28	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST

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Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	217.36	20	\$133.06	100%	100%	\$54.28	36.94	36.94	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	New	3.39	8	\$0.00	100%	100%	\$0.00	3.13	2.87	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	New	78.16	15	\$0.00	100%	100%	\$0.00	128.18	119.42	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	2.75	17	\$0.00	100%	100%	\$0.09	23.82	22.72	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	New	9.80	8	\$0.00	100%	100%	\$0.00	0.36	0.30	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	209.56	15	\$0.07	100%	100%	\$0.01	30.10	28.71	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	18.94	17	\$0.02	100%	100%	\$0.05	5.86	5.65	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

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Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	11.49	11.73	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	8.37	8.41	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	5.05	5.11	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	4.48	4.57	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.35	0.36	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.21	0.22	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.09	0.09	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	5.58	5.60	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	3.37	3.41	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	1.44	1.47	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.79	0.79	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.47	0.48	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	3.72	3.80	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	30.96	31.67	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	15.03	15.37	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	2.76	2.85	CHLR_VSPMP-Cooling-SCE-17_R0-86

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Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	12.39	12.79	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.06	5	\$0.40	18%	30%	\$1,578.54	13.57	14.01	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	1.75	1.78	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	54.71	56.36	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	77.20	77.75	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	3.92	4.06	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	21.30	21.74	STAT_WIFI-All-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	15.52	15.59	STAT_WIFI-All-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	9.36	9.47	STAT_WIFI-All-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.04	15	\$0.36	3%	17%	\$913.29	48.02	51.15	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.06	15	\$0.60	3%	17%	\$1,076.38	69.21	73.68	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.50	0.56	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	19.19	19.68	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	19.65	20.15	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	23.12	24.36	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	33.71	35.52	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	23.05	24.28	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	80.06	20	\$28.65	15%	20%	\$31.73	3.81	3.81	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	29.40	15	\$30.66	20%	50%	\$107.71	123.04	123.04	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	47.04	15	\$21.46	20%	50%	\$47.12	196.86	196.86	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	17.46	10	\$2.66	9%	38%	\$20.47	69.98	69.98	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	13.09	12	\$4.06	9%	38%	\$36.76	51.11	51.11	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	13.09	10	\$4.23	9%	38%	\$43.36	51.11	51.11	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	59.80	10	\$6.26	9%	38%	\$14.04	239.74	239.74	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	70.67	10	\$10.35	9%	38%	\$19.65	275.94	275.94	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	108.73	10	\$52.20	9%	38%	\$64.40	424.52	424.52	FAN_VSD-Motors-UN-v1.0-5
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	40.40	10	\$3.16	17%	50%	\$10.48	188.95	188.95	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	13.85	13.85	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1

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Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.94	0.94	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	46.17	10	\$5.20	9%	15%	\$15.11	37.95	37.95	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	9.23	10	\$2.26	9%	38%	\$32.79	36.05	36.05	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	23.09	10	\$2.27	18%	75%	\$13.18	185.10	185.10	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	17.31	15	\$13.86	26%	45%	\$82.70	45.07	45.07	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.58	10	\$0.21	17%	50%	\$49.48	2.70	2.70	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	3.46	10	\$0.69	17%	50%	\$26.85	16.20	16.20	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	45.84	45.84	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	3.46	15	\$1.91	17%	50%	\$56.86	16.20	16.20	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	Existing	32.32	6	\$5.21	26%	45%	\$31.88	84.13	84.13	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	125.12	10	\$45.83	25%	45%	\$49.13	342.83	342.83	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	3.18	10	\$1.40	10%	50%	\$58.96	69.76	69.76	MTR_GRWND<100HP-Motors-7PLN-v5-17
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.77	10	\$0.50	6%	25%	\$37.67	18.41	18.41	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	26.52	12	\$6.14	16%	25%	\$27.44	138.07	138.07	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	7.07	10	\$1.85	16%	36%	\$35.04	79.39	79.39	DRV_SYNBELT-Motors-7PLN-v5-1

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Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,758.45	10	\$227.62	8%	17%	\$17.36	150.43	150.43	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	Existing	2,572.93	15	\$615.23	8%	17%	\$24.70	220.11	220.11	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	258.13	10	\$604.92	15%	17%	\$314.35	3.54	3.54	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	831.76	1	\$54.66	15%	17%	\$66.47	15.81	15.81	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	322.44	2	\$14.74	15%	17%	\$23.90	6.13	6.13	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	196.01	15	\$97.56	15%	15%	\$51.41	10.74	10.74	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	4.97	15	\$0.67	15%	30%	\$13.94	19.85	19.85	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	4.70	15	\$0.63	8%	16%	\$13.89	7.21	7.21	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	Existing	7.21	10	\$75.00	15%	15%	\$1,396.20	2.77	2.77	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	3.00	15	\$0.02	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	58.11	15	\$5.78	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	35.28	15	\$6.97	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	35.28	15	\$21.90	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.38	15	\$0.09	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.75	15	\$0.41	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.75	15	\$0.01	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	187.08	10	\$45.80	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	193.76	10	\$3.43	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	104.83	10	\$11.82	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	39.46	10	\$21.20	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	31.61	10	\$6.98	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	31.61	10	\$2.86	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	334.07	10	\$34.18	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	0.35	5	\$0.05	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	2.98	1	\$0.13	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	10.02	10	\$9.08	15%	15%	\$16.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	21.21	10	\$9.08	15%	15%	\$16.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	0.80	10	\$9.08	15%	15%	\$16.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.60	10	\$9.08	15%	15%	\$16.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.61	10	\$9.08	15%	15%	\$16.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	21.22	10	\$9.08	15%	15%	\$16.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	Existing	15.80	10	\$9.08	15%	15%	\$16.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	2.61	10	\$9.08	15%	15%	\$16.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	Existing	28.96	3	\$87.78	3%	11%	\$145.41	1.30	1.33	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	Existing	61.28	3	\$87.78	3%	11%	\$145.41	0.98	0.98	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	2.32	3	\$87.78	3%	11%	\$145.41	0.59	0.59	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	7.52	3	\$87.78	3%	11%	\$145.41	1.66	1.77	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	1.75	3	\$87.78	3%	11%	\$145.41	0.42	0.44	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	Existing	61.29	3	\$87.78	3%	11%	\$145.41	15.91	15.91	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	Existing	45.66	3	\$87.78	3%	11%	\$145.41	11.85	11.85	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	7.54	3	\$87.78	3%	11%	\$145.41	3.37	2.62	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	Existing	8.68	3	\$66.59	0%	0%	\$165.25	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Exterior Lighting	Commissioning	employee	Existing	2.02	3	\$66.59	0%	0%	\$165.25	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	Existing	70.72	3	\$66.59	0%	0%	\$165.25	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	Existing	52.68	3	\$66.59	0%	0%	\$165.25	0.00	0.00	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	Existing	8.70	3	\$66.59	0%	0%	\$165.25	0.00	0.00	IND_SEM-Lighting-AEG-1

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Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	8.68	3	\$42.27	5%	39%	\$104.91	32.60	34.82	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	2.02	3	\$42.27	5%	39%	\$104.91	8.25	8.54	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	Existing	70.72	3	\$42.27	5%	39%	\$104.91	312.07	312.07	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	Existing	52.68	3	\$42.27	5%	39%	\$104.91	232.46	232.46	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	8.70	3	\$42.27	5%	39%	\$104.91	66.17	51.43	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	2.36	12	\$1.34	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	39.27	11	\$31.85	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	4.22	4.22	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	2.86	2.86	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	1.67	1.67	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	1.64	1.65	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.12	0.12	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.07	0.07	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.03	0.03	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	1.90	1.90	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	1.12	1.12	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.50	0.50	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.25	0.25	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.15	0.15	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.77	0.77	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	7.64	7.64	AEG-BEST

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Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	3.71	3.71	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.72	0.72	CHLR_VSPMP-Cooling-SCE-17_R0-86
Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	2.70	2.70	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.06	5	\$0.40	18%	30%	\$1,464.76	1.69	1.70	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.43	0.43	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	14.34	14.39	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	18.81	18.81	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.35	0.36	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	2.33	2.33	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	1.58	1.58	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.92	0.92	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.04	15	\$0.36	22%	41%	\$994.75	35.29	35.47	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.05	15	\$0.60	22%	41%	\$1,172.39	49.41	49.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.10	0.10	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	4.17	4.21	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	4.93	4.97	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	4.21	4.28	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	3.32	3.38	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	3.49	3.55	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	New	83.33	20	\$28.65	15%	20%	\$30.49	1.09	1.09	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	30.60	15	\$30.66	20%	50%	\$103.48	30.34	30.34	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	New	48.96	15	\$21.46	20%	50%	\$45.27	48.55	48.55	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	18.17	10	\$2.66	9%	38%	\$19.67	14.40	14.40	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	New	13.63	12	\$4.06	9%	38%	\$35.32	14.04	14.04	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	13.63	10	\$4.23	9%	38%	\$41.66	12.99	12.99	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	62.24	10	\$6.26	9%	38%	\$13.49	49.34	49.34	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	New	73.56	10	\$10.35	9%	38%	\$18.88	70.11	70.11	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	113.17	10	\$52.20	9%	38%	\$61.87	107.87	107.87	FAN_VSD-Motors-UN-v1.0-5

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Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	42.05	10	\$3.16	17%	50%	\$10.07	38.89	38.89	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	4.01	4.01	CMPAIR_HTCPMEDSRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.19	0.19	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	48.06	10	\$5.20	9%	15%	\$14.51	9.64	9.64	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	New	9.61	10	\$2.26	9%	38%	\$31.50	9.16	9.16	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	24.03	10	\$2.27	18%	75%	\$12.67	38.09	38.09	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	18.02	15	\$13.86	26%	45%	\$79.46	13.05	13.05	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.60	10	\$0.21	17%	50%	\$47.54	0.56	0.56	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	3.60	10	\$0.69	17%	50%	\$25.80	3.33	3.33	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	11.50	11.50	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	3.60	15	\$1.91	17%	50%	\$54.63	3.99	3.99	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	New	33.64	6	\$5.21	26%	45%	\$30.63	15.59	15.59	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	130.23	10	\$45.83	25%	45%	\$47.20	87.11	87.11	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	3.18	10	\$1.40	10%	50%	\$58.96	17.03	17.03	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.77	10	\$0.50	6%	25%	\$37.67	4.49	4.49	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	26.52	12	\$6.14	16%	25%	\$27.44	36.43	36.43	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	7.07	10	\$1.85	16%	36%	\$35.04	15.70	15.70	DRV_SYNBELT-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	New	1,830.26	10	\$227.62	8%	17%	\$16.68	37.71	37.71	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	New	2,678.00	15	\$615.23	8%	17%	\$23.73	62.57	62.57	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	268.67	10	\$604.92	15%	17%	\$302.02	0.90	0.90	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	865.72	1	\$54.66	15%	17%	\$63.86	4.52	4.52	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	335.61	2	\$14.74	15%	17%	\$22.96	0.32	0.32	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	New	204.01	15	\$97.56	15%	15%	\$49.39	3.11	3.11	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.17	15	\$0.67	15%	30%	\$13.39	5.64	5.64	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	4.89	15	\$0.63	8%	16%	\$13.34	2.09	2.09	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	New	7.50	10	\$75.00	15%	15%	\$1,341.42	0.70	0.70	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	3.12	15	\$0.02	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	60.48	15	\$5.78	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	36.72	15	\$6.97	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	36.72	15	\$21.90	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.39	15	\$0.09	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.78	15	\$0.41	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.78	15	\$0.01	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	New	194.72	10	\$45.80	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	201.67	10	\$3.43	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	New	109.11	10	\$11.82	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	New	39.46	10	\$21.20	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	31.61	10	\$6.98	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	31.61	10	\$2.86	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	347.71	10	\$34.18	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	New	0.35	5	\$0.05	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.10	1	\$0.13	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	New	10.71	10	\$9.08	15%	15%	\$16.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Heating	Transformer - High Efficiency	employee	New	21.46	10	\$9.08	15%	15%	\$16.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	0.78	10	\$9.08	15%	15%	\$16.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	2.21	10	\$9.08	15%	15%	\$16.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	0.57	10	\$9.08	15%	15%	\$16.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	New	21.22	10	\$9.08	15%	15%	\$16.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	New	15.80	10	\$9.08	15%	15%	\$16.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	2.56	10	\$9.08	15%	15%	\$16.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	New	30.93	3	\$87.78	3%	11%	\$143.90	0.07	0.07	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	New	62.00	3	\$87.78	3%	11%	\$143.90	0.05	0.05	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	New	2.25	3	\$87.78	3%	11%	\$143.90	0.03	0.03	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	6.39	3	\$87.78	3%	11%	\$143.90	0.08	0.08	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	1.64	3	\$87.78	3%	11%	\$143.90	0.02	0.02	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	New	61.29	3	\$87.78	3%	11%	\$143.90	0.75	0.75	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	New	45.66	3	\$87.78	3%	11%	\$143.90	0.56	0.56	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	7.41	3	\$87.78	3%	11%	\$143.90	0.15	0.10	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	New	7.37	3	\$66.59	5%	39%	\$166.76	2.12	2.14	IND_SEM-HVAC-AEG-1

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Agriculture	Exterior Lighting	Commissioning	employee	New	1.89	3	\$66.59	5%	39%	\$166.76	0.55	0.55	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	New	70.72	3	\$66.59	5%	39%	\$166.76	27.85	27.85	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	New	52.68	3	\$66.59	5%	39%	\$166.76	25.93	25.93	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	New	8.55	3	\$66.59	5%	39%	\$166.76	2.56	2.09	IND_SEM-Lighting-AEG-1
Agriculture	Interior Lighting	Retrocommissioning	employee	New	7.37	3	\$42.27	0%	0%	\$105.86	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	1.89	3	\$42.27	0%	0%	\$105.86	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	New	70.72	3	\$42.27	0%	0%	\$105.86	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	New	52.68	3	\$42.27	0%	0%	\$105.86	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	New	8.55	3	\$42.27	0%	0%	\$105.86	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	New	2.45	12	\$1.34	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	40.88	11	\$31.85	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	1.75	1.79	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	1.28	1.28	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.77	0.78	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.68	0.70	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.05	0.05	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.03	0.03	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.01	0.01	Building Energy Simulation Tool
Mining	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.85	0.85	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.51	0.52	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.22	0.22	Building Energy Simulation Tool

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Mining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.12	0.12	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.07	0.07	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.57	0.58	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	4.72	4.83	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	2.29	2.34	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.42	0.43	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	1.89	1.95	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	Existing	0.23	5	\$0.40	18%	30%	\$416.89	2.07	2.13	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.27	0.27	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	8.34	8.59	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	11.76	11.85	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.60	0.62	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	3.25	3.31	STAT_WIFI-AII-7PLN-v2-1
Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	2.36	2.38	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	1.43	1.44	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.17	15	\$0.36	7%	33%	\$241.20	22.92	24.40	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.24	15	\$0.60	7%	33%	\$284.27	32.09	34.16	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.12	0.13	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	4.45	4.57	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	4.56	4.68	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	5.36	5.65	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	7.82	8.24	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	5.35	5.63	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	76.92	20	\$27.52	15%	20%	\$31.73	0.28	0.28	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$23.15	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Mining	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$16.20	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	Existing	2,024.36	10	\$308.94	9%	38%	\$20.47	314.27	314.27	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	Existing	1,518.27	12	\$470.82	9%	38%	\$36.76	229.55	229.55	PUMP_SYSOPT-Motors-UN-v1.0-5

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Mining	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,518.27	10	\$490.73	9%	38%	\$43.36	229.55	229.55	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	Existing	309.28	10	\$32.36	9%	38%	\$14.04	48.01	48.01	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	Existing	365.51	10	\$53.55	9%	38%	\$19.65	55.26	55.26	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	Existing	562.32	10	\$269.95	9%	38%	\$64.40	85.02	85.02	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,476.10	10	\$115.34	17%	50%	\$10.48	267.34	267.34	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	19.60	19.60	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	1.33	1.33	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	1,686.97	10	\$189.96	9%	15%	\$15.11	53.70	53.70	E3T
Mining	Motors	Compressed Air - System Controls	employee	Existing	337.39	10	\$82.47	9%	38%	\$32.79	51.01	51.01	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	Existing	843.49	10	\$82.90	18%	75%	\$13.18	261.89	261.89	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	632.61	15	\$506.53	26%	45%	\$82.70	63.76	63.76	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	21.09	10	\$7.78	17%	50%	\$49.48	3.82	3.82	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	126.52	10	\$25.33	17%	50%	\$26.85	22.92	22.92	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	64.86	64.86	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	126.52	15	\$69.65	17%	50%	\$56.86	22.92	22.92	CMPAIR_STORAGE-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Motors	Compressed Air - End Use Optimization	employee	Existing	1,180.88	6	\$190.19	26%	45%	\$31.88	119.03	119.03	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	Existing	552.87	10	\$202.49	25%	45%	\$49.13	58.66	58.66	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	50.61	10	\$22.24	10%	50%	\$58.96	53.70	53.70	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	28.12	10	\$7.90	6%	25%	\$37.67	14.17	14.17	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	421.74	12	\$97.64	16%	25%	\$27.44	106.27	106.27	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	Existing	112.46	10	\$29.37	16%	36%	\$35.04	61.11	61.11	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,689.39	10	\$218.68	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	2,471.88	15	\$591.07	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	14,968.58	10	\$604.92	0%	0%	\$5.42	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	799.09	1	\$54.66	0%	0%	\$69.18	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	309.78	2	\$14.74	0%	0%	\$24.87	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Mining	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$73.66	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	12.65	15	\$1.71	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	721.50	15	\$97.00	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Mining	Motors	Automatic Milker Takeoffs	Cows	Existing	835.69	10	\$8,698.16	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	Existing	118.38	15	\$0.94	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$4.36	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$5.26	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$16.54	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	14.80	15	\$3.37	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	29.60	15	\$16.27	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	29.60	15	\$0.33	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	Existing	826.62	10	\$202.37	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	856.14	10	\$15.16	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	Existing	133.18	10	\$15.01	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Mining	Process	Paper: Premium Control Large Material	employee	Existing	138.56	10	\$74.43	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	Existing	110.98	10	\$24.52	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	Existing	110.98	10	\$10.05	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Mining	Motors	Kraft: Efficient Agitator	employee	Existing	1,476.10	10	\$151.02	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	Existing	1.24	5	\$0.17	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	13.18	1	\$0.58	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	Existing	39.45	10	\$73.53	15%	15%	\$16.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	Existing	83.47	10	\$73.53	15%	15%	\$16.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	Existing	3.17	10	\$73.53	15%	15%	\$16.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	Existing	15.60	10	\$73.53	15%	15%	\$16.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.64	10	\$73.53	15%	15%	\$16.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	Existing	421.74	10	\$73.53	15%	15%	\$16.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	Existing	33.30	10	\$73.53	15%	15%	\$16.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	Existing	5.01	10	\$73.53	15%	15%	\$16.32	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	Existing	113.96	3	\$710.88	3%	11%	\$146.59	0.20	0.20	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	Existing	241.14	3	\$710.88	3%	11%	\$146.59	0.15	0.15	IND_SEM-HVAC-AEG-1
Mining	Ventilation	Strategic Energy Management	employee	Existing	9.15	3	\$710.88	3%	11%	\$146.59	0.09	0.09	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	Existing	45.08	3	\$710.88	3%	11%	\$146.59	0.39	0.41	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	Existing	10.50	3	\$710.88	3%	11%	\$146.59	0.10	0.10	IND_SEM-Lighting-AEG-1

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Mining	Motors	Strategic Energy Management	employee	Existing	1,218.37	3	\$710.88	3%	11%	\$146.59	12.25	12.25	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	Existing	96.19	3	\$710.88	3%	11%	\$146.59	0.97	0.97	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	Existing	14.48	3	\$710.88	3%	11%	\$146.59	0.25	0.20	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	Existing	52.02	3	\$783.84	0%	0%	\$176.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	Existing	12.12	3	\$783.84	0%	0%	\$176.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	Existing	1,405.81	3	\$783.84	0%	0%	\$176.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	Existing	110.98	3	\$783.84	0%	0%	\$176.52	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	Existing	16.71	3	\$783.84	0%	0%	\$176.52	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	Existing	52.02	3	\$497.60	10%	40%	\$112.06	6.68	7.13	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	Existing	12.12	3	\$497.60	10%	40%	\$112.06	1.69	1.75	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	Existing	1,405.81	3	\$497.60	10%	40%	\$112.06	211.95	211.95	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	Existing	110.98	3	\$497.60	10%	40%	\$112.06	16.73	16.73	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	Existing	16.71	3	\$497.60	10%	40%	\$112.06	4.34	3.38	IND_RCX-Process-AEG-1
Mining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	273.49	12	\$155.31	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	4,554.82	11	\$3,694.11	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Mining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.64	0.64	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.44	0.44	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.26	0.26	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.25	0.25	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.02	0.02	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool

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Mining	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.29	0.29	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.17	0.17	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.08	0.08	Building Energy Simulation Tool
Mining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.04	0.04	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.02	0.02	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.12	0.12	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	1.16	1.16	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.57	0.57	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.11	0.11	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.41	0.41	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	New	0.24	5	\$0.40	18%	30%	\$386.84	0.26	0.26	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.06	0.06	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	2.19	2.19	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	2.87	2.87	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.05	0.05	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.35	0.36	STAT_WIFI-All-7PLN-v2-1

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Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.24	0.24	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.14	0.14	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.14	15	\$0.36	22%	41%	\$262.71	8.20	8.24	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.20	15	\$0.60	22%	41%	\$309.62	11.48	11.54	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.97	0.98	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	1.14	1.15	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.98	0.99	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.77	0.78	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.81	0.82	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	80.06	20	\$27.52	15%	20%	\$30.49	0.08	0.08	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$23.15	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Mining	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$16.20	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	New	2,107.03	10	\$308.94	9%	38%	\$19.67	64.68	64.68	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	New	1,580.27	12	\$470.82	9%	38%	\$35.32	63.05	63.05	PUMP_SYSOPT-Motors-UN-v1.0-5
Mining	Motors	Pumping System - Variable Speed Drive	employee	New	1,580.27	10	\$490.73	9%	38%	\$41.66	58.33	58.33	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	New	321.91	10	\$32.36	9%	38%	\$13.49	9.88	9.88	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	New	380.44	10	\$53.55	9%	38%	\$18.88	14.04	14.04	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	New	585.29	10	\$269.95	9%	38%	\$61.87	21.60	21.60	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	New	1,536.38	10	\$115.34	17%	50%	\$10.07	55.02	55.02	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	5.68	5.68	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.27	0.27	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	1,755.86	10	\$189.96	9%	15%	\$14.51	13.64	13.64	E3T
Mining	Motors	Compressed Air - System Controls	employee	New	351.17	10	\$82.47	9%	38%	\$31.50	12.96	12.96	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	New	877.93	10	\$82.90	18%	75%	\$12.67	53.90	53.90	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	New	658.45	15	\$506.53	26%	45%	\$79.46	18.46	18.46	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	21.95	10	\$7.78	17%	50%	\$47.54	0.79	0.79	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	131.69	10	\$25.33	17%	50%	\$25.80	4.72	4.72	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	16.28	16.28	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	131.69	15	\$69.65	17%	50%	\$54.63	5.65	5.65	CMPAIR_STORAGE-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - End Use Optimization	employee	New	1,229.10	6	\$190.19	26%	45%	\$30.63	22.06	22.06	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	New	575.44	10	\$202.49	25%	45%	\$47.20	14.90	14.90	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	New	50.61	10	\$22.24	10%	50%	\$58.96	13.11	13.11	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	New	28.12	10	\$7.90	6%	25%	\$37.67	3.46	3.46	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	New	421.74	12	\$97.64	16%	25%	\$27.44	28.04	28.04	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	New	112.46	10	\$29.37	16%	36%	\$35.04	12.08	12.08	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	New	1,758.38	10	\$218.68	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	New	2,572.82	15	\$591.07	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	15,579.83	10	\$604.92	0%	0%	\$5.21	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	831.72	1	\$54.66	0%	0%	\$66.47	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	322.43	2	\$14.74	0%	0%	\$23.90	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Mining	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$73.66	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	750.96	15	\$97.00	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Mining	Motors	Automatic Milker Takeoffs	Cows	New	869.82	10	\$8,698.16	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	New	123.22	15	\$0.94	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$4.36	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$5.26	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$16.54	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	15.40	15	\$3.37	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	30.80	15	\$16.27	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	30.80	15	\$0.33	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	New	860.37	10	\$202.37	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	891.10	10	\$15.16	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	New	138.62	10	\$15.01	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Mining	Process	Paper: Premium Control Large Material	employee	New	138.56	10	\$74.43	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	New	110.98	10	\$24.52	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	New	110.98	10	\$10.05	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Mining	Motors	Kraft: Efficient Agitator	employee	New	1,536.38	10	\$151.02	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	New	1.24	5	\$0.17	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	13.71	1	\$0.58	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	New	42.13	10	\$73.53	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	New	84.46	10	\$73.53	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	New	3.06	10	\$73.53	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	New	13.25	10	\$73.53	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	New	3.40	10	\$73.53	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	New	421.74	10	\$73.53	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	New	33.30	10	\$73.53	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	New	4.93	10	\$73.53	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	New	121.70	3	\$710.88	3%	11%	\$145.85	0.01	0.01	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	New	243.99	3	\$710.88	3%	11%	\$145.85	0.01	0.01	IND_SEM-HVAC-AEG-1

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Mining	Ventilation	Strategic Energy Management	employee	New	8.85	3	\$710.88	3%	11%	\$145.85	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	New	38.28	3	\$710.88	3%	11%	\$145.85	0.02	0.02	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	New	9.81	3	\$710.88	3%	11%	\$145.85	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Motors	Strategic Energy Management	employee	New	1,218.37	3	\$710.88	3%	11%	\$145.85	0.58	0.58	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	New	96.19	3	\$710.88	3%	11%	\$145.85	0.05	0.05	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	New	14.23	3	\$710.88	3%	11%	\$145.85	0.01	0.01	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	New	44.17	3	\$783.84	10%	40%	\$177.11	0.43	0.44	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	New	11.32	3	\$783.84	10%	40%	\$177.11	0.11	0.11	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	New	1,405.81	3	\$783.84	10%	40%	\$177.11	23.62	23.62	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	New	110.98	3	\$783.84	10%	40%	\$177.11	1.12	1.12	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	New	16.42	3	\$783.84	10%	40%	\$177.11	0.17	0.14	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	New	44.17	3	\$497.60	0%	0%	\$112.44	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	New	11.32	3	\$497.60	0%	0%	\$112.44	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	New	1,405.81	3	\$497.60	0%	0%	\$112.44	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	New	110.98	3	\$497.60	0%	0%	\$112.44	0.00	0.00	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	New	16.42	3	\$497.60	0%	0%	\$112.44	0.00	0.00	IND_RCX-Process-AEG-1

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Mining	Motors	Municipal Sewage Treatment - Optimization	employee	New	284.66	12	\$155.31	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	4,740.82	11	\$3,694.11	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Mining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	6.60	6.74	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	4.81	4.83	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	2.90	2.94	Building Energy Simulation Tool

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Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	2.57	2.63	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.20	0.20	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.12	0.12	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.05	0.05	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	3.21	3.22	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	1.94	1.96	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.83	0.85	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.45	0.45	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.27	0.28	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	2.14	2.18	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	17.80	18.20	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	8.64	8.84	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	1.59	1.64	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	7.12	7.35	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	6.67	5	\$0.40	18%	30%	\$14.16	7.80	8.05	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	1.00	1.02	VENT_DCV-Ventilation-7PLN-v5-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	31.45	32.40	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	44.38	44.70	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	2.25	2.33	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	12.24	12.50	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	8.92	8.96	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	5.38	5.44	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	4.97	15	\$0.36	7%	33%	\$8.19	139.19	148.22	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	6.96	15	\$0.60	7%	33%	\$9.65	194.87	207.51	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.70	0.79	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	27.24	27.94	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	27.89	28.61	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	32.82	34.58	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	47.86	50.43	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	32.72	34.47	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	13,671.20	20	\$4,892.16	15%	20%	\$31.73	2.96	2.96	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	6,165.04	15	\$6,429.03	20%	50%	\$107.71	117.53	117.53	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	9,864.06	15	\$4,499.60	20%	50%	\$47.12	188.06	188.06	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	28,844.74	10	\$4,401.97	9%	38%	\$20.47	526.81	526.81	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	21,633.55	12	\$6,708.59	9%	38%	\$36.76	384.81	384.81	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	21,633.55	10	\$6,992.35	9%	38%	\$43.36	384.81	384.81	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	26,377.07	10	\$2,760.26	9%	38%	\$14.04	481.74	481.74	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	31,172.90	10	\$4,566.97	9%	38%	\$19.65	554.49	554.49	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	47,958.30	10	\$23,023.27	9%	38%	\$64.40	853.06	853.06	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	32,278.51	10	\$2,522.11	17%	50%	\$10.48	687.78	687.78	CMPAIR_EQPT-Motors-7PLN-v5-2
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	50.43	50.43	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	3.41	3.41	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	36,889.73	10	\$4,153.97	9%	15%	\$15.11	138.14	138.14	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	7,377.95	10	\$1,803.31	9%	38%	\$32.79	131.24	131.24	CMPAIR_SYSCtrl-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	18,444.86	10	\$1,812.76	18%	75%	\$13.18	673.74	673.74	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	13,833.65	15	\$11,076.40	26%	45%	\$82.70	164.04	164.04	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	461.12	10	\$170.09	17%	50%	\$49.48	9.83	9.83	CMPAIR_LPDPFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	2,766.73	10	\$553.82	17%	50%	\$26.85	58.95	58.95	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	166.86	166.86	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	2,766.73	15	\$1,523.01	17%	50%	\$56.86	58.95	58.95	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	25,822.81	6	\$4,159.00	26%	45%	\$31.88	306.22	306.22	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	84,716.69	10	\$31,028.46	25%	45%	\$49.13	1,057.47	1,057.47	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	1,754.79	10	\$771.26	10%	50%	\$58.96	219.04	219.04	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	974.89	10	\$273.75	6%	25%	\$37.67	57.80	57.80	MTR_GRWND>100HP-Motors-7PLN-v5-25
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	14,623.28	12	\$3,385.49	16%	25%	\$27.44	433.52	433.52	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	3,899.54	10	\$1,018.49	16%	36%	\$35.04	249.27	249.27	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	300,268.56	10	\$38,868.42	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	439,347.26	15	\$105,055.33	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	426,568.12	10	\$604.92	0%	0%	\$0.19	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	142,028.58	1	\$54.66	0%	0%	\$0.39	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	55,058.88	2	\$14.74	0%	0%	\$0.14	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	41,100.26	15	\$20,457.69	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	4.05	15	\$0.55	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	37.01	15	\$4.98	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	11,907.57	10	\$123,938.18	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	1,298.46	15	\$10.28	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	12,184.45	15	\$1,211.38	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	7,398.05	15	\$1,462.28	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	7,398.05	15	\$4,593.02	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	162.31	15	\$37.00	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	324.62	15	\$178.47	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	324.62	15	\$3.58	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	126,663.41	10	\$31,009.85	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	131,187.10	10	\$2,322.36	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	27,201.81	10	\$3,066.19	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	9,015.44	10	\$4,842.95	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	7,221.08	10	\$1,595.28	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	7,221.08	10	\$654.02	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	226,184.66	10	\$23,140.43	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	80.83	5	\$11.19	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	2,019.01	1	\$88.27	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	1,264.93	10	\$2,878.57	15%	15%	\$16.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	2,676.68	10	\$2,878.57	15%	15%	\$16.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	101.52	10	\$2,878.57	15%	15%	\$16.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	811.56	10	\$2,878.57	15%	15%	\$16.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	189.07	10	\$2,878.57	15%	15%	\$16.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	14,623.28	10	\$2,878.57	15%	15%	\$16.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	3,610.54	10	\$2,878.57	15%	15%	\$16.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	445.49	10	\$2,878.57	15%	15%	\$16.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	3,654.23	3	\$27,831.34	3%	11%	\$145.97	5.62	5.73	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	Existing	7,732.63	3	\$27,831.34	3%	11%	\$145.97	4.22	4.24	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	293.27	3	\$27,831.34	3%	11%	\$145.97	2.53	2.56	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	2,344.49	3	\$27,831.34	3%	11%	\$145.97	17.70	18.90	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	546.19	3	\$27,831.34	3%	11%	\$145.97	4.48	4.64	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	Existing	42,244.99	3	\$27,831.34	3%	11%	\$145.97	374.66	374.66	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	Existing	10,430.45	3	\$27,831.34	3%	11%	\$145.97	92.50	92.50	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	1,286.96	3	\$27,831.34	3%	11%	\$145.97	19.68	15.30	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	Existing	2,705.19	3	\$31,802.77	0%	0%	\$173.82	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	630.22	3	\$31,802.77	0%	0%	\$173.82	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	Existing	48,744.25	3	\$31,802.77	0%	0%	\$173.82	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Process	Commissioning	employee	Existing	12,035.14	3	\$31,802.77	0%	0%	\$173.82	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	Existing	1,484.96	3	\$31,802.77	0%	0%	\$173.82	0.00	0.00	IND_SEM-Lighting-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	2,705.19	3	\$20,189.02	10%	37%	\$110.35	36.76	39.25	IND_RCX-Motors-AEG-1
Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	630.22	3	\$20,189.02	10%	37%	\$110.35	9.31	9.63	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	Existing	48,744.25	3	\$20,189.02	10%	37%	\$110.35	778.13	778.13	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	Existing	12,035.14	3	\$20,189.02	10%	37%	\$110.35	192.12	192.12	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	1,484.96	3	\$20,189.02	10%	37%	\$110.35	40.88	31.77	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	3,896.90	12	\$2,212.95	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	64,900.66	11	\$52,636.65	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	2.42	2.43	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	1.64	1.64	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.96	0.96	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.95	0.95	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.07	0.07	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.04	0.04	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.02	0.02	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	1.09	1.09	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.64	0.64	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.29	0.29	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.15	0.15	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.09	0.09	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.44	0.44	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	4.39	4.39	AEG-BEST

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Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	2.13	2.13	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.41	0.41	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	1.55	1.55	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	New	7.10	5	\$0.40	18%	30%	\$13.14	0.97	0.98	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.25	0.25	VENT_DCV-Ventilation-7PLN-v5-5
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	8.24	8.27	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	10.81	10.81	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.20	0.21	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	1.34	1.34	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.91	0.91	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.53	0.53	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	4.20	15	\$0.36	22%	41%	\$8.92	50.68	50.93	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	5.89	15	\$0.60	22%	41%	\$10.52	70.95	71.31	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.14	0.15	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	5.92	5.98	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	6.99	7.06	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	5.98	6.08	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	4.71	4.79	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	4.95	5.04	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	14,229.48	20	\$4,892.16	15%	20%	\$30.49	0.85	0.85	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	6,416.79	15	\$6,429.03	20%	50%	\$103.48	28.99	28.99	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	New	10,266.87	15	\$4,499.60	20%	50%	\$45.27	46.38	46.38	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	30,022.63	10	\$4,401.97	9%	38%	\$19.67	108.42	108.42	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	New	22,516.97	12	\$6,708.59	9%	38%	\$35.32	105.69	105.69	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	22,516.97	10	\$6,992.35	9%	38%	\$41.66	97.78	97.78	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	27,454.19	10	\$2,760.26	9%	38%	\$13.49	99.14	99.14	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	32,445.86	10	\$4,566.97	9%	38%	\$18.88	140.89	140.89	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	49,916.71	10	\$23,023.27	9%	38%	\$61.87	216.75	216.75	FAN_VSD-Motors-UN-v1.0-5

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Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	33,596.62	10	\$2,522.11	17%	50%	\$10.07	141.55	141.55	CMPAIR_EQPT-Motors-7PLN-v5-2
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	14.60	14.60	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.70	0.70	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	38,396.14	10	\$4,153.97	9%	15%	\$14.51	35.10	35.10	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	New	7,679.23	10	\$1,803.31	9%	38%	\$31.50	33.35	33.35	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	19,198.07	10	\$1,812.76	18%	75%	\$12.67	138.66	138.66	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	14,398.55	15	\$11,076.40	26%	45%	\$79.46	47.50	47.50	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	479.95	10	\$170.09	17%	50%	\$47.54	2.02	2.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	2,879.71	10	\$553.82	17%	50%	\$25.80	12.13	12.13	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	41.88	41.88	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	2,879.71	15	\$1,523.01	17%	50%	\$54.63	14.54	14.54	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	New	26,877.30	6	\$4,159.00	26%	45%	\$30.63	56.74	56.74	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	88,176.15	10	\$31,028.46	25%	45%	\$47.20	268.69	268.69	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	1,754.79	10	\$771.26	10%	50%	\$58.96	53.47	53.47	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	974.89	10	\$273.75	6%	25%	\$37.67	14.11	14.11	MTR_GRWND>100HP-Motors-7PLN-v5-25
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	14,623.28	12	\$3,385.49	16%	25%	\$27.44	114.40	114.40	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	3,899.54	10	\$1,018.49	16%	36%	\$35.04	49.29	49.29	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	312,530.20	10	\$38,868.42	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	457,288.26	15	\$105,055.33	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	443,987.27	10	\$604.92	0%	0%	\$0.18	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	147,828.40	1	\$54.66	0%	0%	\$0.37	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	57,307.24	2	\$14.74	0%	0%	\$0.13	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	42,778.61	15	\$20,457.69	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	4.21	15	\$0.55	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	38.53	15	\$4.98	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	New	12,393.82	10	\$123,938.18	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	1,351.49	15	\$10.28	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	12,682.01	15	\$1,211.38	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	7,700.15	15	\$1,462.28	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	7,700.15	15	\$4,593.02	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	168.94	15	\$37.00	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	337.87	15	\$178.47	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	337.87	15	\$3.58	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	131,835.78	10	\$31,009.85	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	136,544.20	10	\$2,322.36	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	New	28,312.62	10	\$3,066.19	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	9,015.44	10	\$4,842.95	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	7,221.08	10	\$1,595.28	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	7,221.08	10	\$654.02	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	235,421.04	10	\$23,140.43	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	80.83	5	\$11.19	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	2,101.45	1	\$88.27	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	1,350.93	10	\$2,878.57	15%	15%	\$16.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Food Mfg	Heating	Transformer - High Efficiency	employee	New	2,708.29	10	\$2,878.57	15%	15%	\$16.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	98.19	10	\$2,878.57	15%	15%	\$16.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	689.15	10	\$2,878.57	15%	15%	\$16.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	176.60	10	\$2,878.57	15%	15%	\$16.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Motors	Transformer - High Efficiency	employee	New	14,623.28	10	\$2,878.57	15%	15%	\$16.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	New	3,610.54	10	\$2,878.57	15%	15%	\$16.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	437.80	10	\$2,878.57	15%	15%	\$16.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	New	3,902.68	3	\$27,831.34	3%	11%	\$145.64	0.29	0.29	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	New	7,823.94	3	\$27,831.34	3%	11%	\$145.64	0.20	0.20	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	New	283.67	3	\$27,831.34	3%	11%	\$145.64	0.12	0.12	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	1,990.87	3	\$27,831.34	3%	11%	\$145.64	0.81	0.83	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	510.18	3	\$27,831.34	3%	11%	\$145.64	0.21	0.21	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	New	42,244.99	3	\$27,831.34	3%	11%	\$145.64	17.77	17.77	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	New	10,430.45	3	\$27,831.34	3%	11%	\$145.64	4.39	4.39	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	1,264.75	3	\$27,831.34	3%	11%	\$145.64	0.87	0.58	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	New	2,297.16	3	\$31,802.77	10%	37%	\$174.67	2.36	2.39	IND_SEM-HVAC-AEG-1

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Food Mfg	Exterior Lighting	Commissioning	employee	New	588.67	3	\$31,802.77	10%	37%	\$174.67	0.61	0.62	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	New	48,744.25	3	\$31,802.77	10%	37%	\$174.67	85.95	85.95	IND_SEM-HVAC-AEG-1
Food Mfg	Process	Commissioning	employee	New	12,035.14	3	\$31,802.77	10%	37%	\$174.67	21.22	21.22	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	New	1,459.33	3	\$31,802.77	10%	37%	\$174.67	1.59	1.30	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	2,297.16	3	\$20,189.02	0%	0%	\$110.89	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	588.67	3	\$20,189.02	0%	0%	\$110.89	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	New	48,744.25	3	\$20,189.02	0%	0%	\$110.89	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	New	12,035.14	3	\$20,189.02	0%	0%	\$110.89	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	1,459.33	3	\$20,189.02	0%	0%	\$110.89	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	4,056.04	12	\$2,212.95	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	67,550.92	11	\$52,636.65	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	0.20	0.21	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.15	0.15	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.09	0.09	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.08	0.08	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.01	0.01	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.10	0.10	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.06	0.06	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.03	0.03	Building Energy Simulation Tool

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Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.01	0.01	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.01	0.01	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.07	0.07	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	0.55	0.56	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	0.27	0.27	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.05	0.05	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	0.22	0.23	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.00	5	\$0.40	18%	30%	\$46,113.89	0.24	0.25	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.03	0.03	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	0.97	1.00	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	1.37	1.38	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.07	0.07	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	0.38	0.39	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	0.28	0.28	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.17	0.17	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.36	7%	33%	\$26,679.86	5.81	6.19	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.60	7%	33%	\$31,444.12	8.14	8.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.03	0.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	1.13	1.16	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	1.16	1.18	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	1.36	1.43	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	1.98	2.09	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	1.36	1.43	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	172.39	20	\$61.69	15%	20%	\$31.73	0.12	0.12	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	1.80	15	\$1.88	20%	50%	\$107.71	0.50	0.50	RFG_FHPC-Refrigeration-RTF-v1.3-23
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	2.89	15	\$1.32	20%	50%	\$47.12	0.80	0.80	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	169.94	10	\$25.93	9%	38%	\$20.47	45.39	45.39	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	127.46	12	\$39.52	9%	38%	\$36.76	33.16	33.16	PUMP_SYSOPT-Motors-UN-v1.0-5

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Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	127.46	10	\$41.20	9%	38%	\$43.36	33.16	33.16	PUMP_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	90.35	10	\$9.46	9%	38%	\$14.04	24.13	24.13	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	106.78	10	\$15.64	9%	38%	\$19.65	27.78	27.78	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	164.28	10	\$78.87	9%	38%	\$64.40	42.74	42.74	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	161.55	10	\$12.62	17%	50%	\$10.48	50.34	50.34	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	3.69	3.69	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.25	0.25	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	184.63	10	\$20.79	9%	15%	\$15.11	10.11	10.11	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	36.93	10	\$9.03	9%	38%	\$32.79	9.61	9.61	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	92.31	10	\$9.07	18%	75%	\$13.18	49.31	49.31	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	69.23	15	\$55.44	26%	45%	\$82.70	12.01	12.01	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.31	10	\$0.85	17%	50%	\$49.48	0.72	0.72	CMPAIR_LPDPFILT-Motors-ILTRM-v4.0-1
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	13.85	10	\$2.77	17%	50%	\$26.85	4.32	4.32	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	12.21	12.21	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	13.85	15	\$7.62	17%	50%	\$56.86	4.32	4.32	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	129.24	6	\$20.81	26%	45%	\$31.88	22.41	22.41	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	366.84	10	\$134.36	25%	45%	\$49.13	66.97	66.97	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	7.46	10	\$3.28	10%	50%	\$58.96	13.62	13.62	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	4.14	10	\$1.16	6%	25%	\$37.67	3.59	3.59	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	62.15	12	\$14.39	16%	25%	\$27.44	26.95	26.95	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	16.57	10	\$4.33	16%	36%	\$35.04	15.49	15.49	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	3,786.21	10	\$490.11	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	5,539.91	15	\$1,324.69	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	11,309.23	10	\$604.92	0%	0%	\$7.18	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,790.90	1	\$54.66	0%	0%	\$30.87	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	694.26	2	\$14.74	0%	0%	\$11.10	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	12.03	15	\$5.99	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	38.76	15	\$5.23	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	745.23	15	\$100.19	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	70.15	10	\$730.19	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	16.04	15	\$0.13	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	3.57	15	\$0.35	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	2.16	15	\$0.43	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	2.16	15	\$1.34	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.00	15	\$0.46	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	4.01	15	\$2.20	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	4.01	15	\$0.04	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	548.48	10	\$134.28	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	568.06	10	\$10.06	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	54.75	10	\$6.17	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	10.46	10	\$5.62	15%	40%	\$72.06	11.31	11.31	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	8.38	10	\$1.85	15%	29%	\$29.63	5.16	5.16	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	8.38	10	\$0.76	15%	25%	\$12.15	3.44	3.44	PAPER_EFFTREAT-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	979.42	10	\$100.20	15%	29%	\$13.72	120.68	120.68	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.09	5	\$0.01	15%	38%	\$31.86	0.09	0.09	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	8.74	1	\$0.38	15%	52%	\$44.22	2.78	2.78	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	2.67	10	\$9.58	15%	15%	\$16.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	5.65	10	\$9.58	15%	15%	\$16.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.21	10	\$9.58	15%	15%	\$16.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.30	10	\$9.58	15%	15%	\$16.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.54	10	\$9.58	15%	15%	\$16.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	62.15	10	\$9.58	15%	15%	\$16.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	4.19	10	\$9.58	15%	15%	\$16.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.25	10	\$9.58	15%	15%	\$16.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	7.71	3	\$92.62	3%	11%	\$145.93	0.24	0.25	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	16.32	3	\$92.62	3%	11%	\$145.93	0.18	0.18	IND_SEM-HVAC-AEG-1
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	0.62	3	\$92.62	3%	11%	\$145.93	0.11	0.11	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	6.64	3	\$92.62	3%	11%	\$145.93	1.03	1.10	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	1.55	3	\$92.62	3%	11%	\$145.93	0.26	0.27	IND_SEM-Lighting-AEG-1

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Paper Mfg	Motors	Strategic Energy Management	employee	Existing	179.55	3	\$92.62	3%	11%	\$145.93	32.60	32.60	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	Existing	12.11	3	\$92.62	3%	11%	\$145.93	2.20	2.20	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	3.61	3	\$92.62	3%	11%	\$145.93	1.13	0.88	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	7.66	3	\$114.33	0%	0%	\$174.77	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	1.78	3	\$114.33	0%	0%	\$174.77	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	Existing	207.17	3	\$114.33	0%	0%	\$174.77	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	Existing	13.97	3	\$114.33	0%	0%	\$174.77	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	4.16	3	\$114.33	0%	0%	\$174.77	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	7.66	3	\$72.58	10%	35%	\$110.95	1.41	1.51	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	1.78	3	\$72.58	10%	35%	\$110.95	0.36	0.37	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	Existing	207.17	3	\$72.58	10%	35%	\$110.95	44.78	44.78	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	Existing	13.97	3	\$72.58	10%	35%	\$110.95	3.02	3.02	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	4.16	3	\$72.58	10%	35%	\$110.95	1.55	1.21	IND_RCX-Process-AEG-1
Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	22.96	12	\$13.04	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	382.37	11	\$310.11	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.07	0.07	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.05	0.05	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.03	0.03	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.03	0.03	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.03	0.03	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.02	0.02	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.01	0.01	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.14	0.14	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.07	0.07	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.05	0.05	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.00	5	\$0.40	18%	30%	\$42,790.05	0.03	0.03	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	0.25	0.26	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	0.33	0.33	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.04	0.04	STAT_WIFI-All-7PLN-v2-1

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Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.03	0.03	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.02	0.02	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.36	22%	41%	\$29,059.67	2.08	2.09	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.60	22%	41%	\$34,248.90	2.91	2.92	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.25	0.25	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.29	0.29	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.25	0.25	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.20	0.20	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.21	0.21	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	179.43	20	\$61.69	15%	20%	\$30.49	0.03	0.03	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	1.88	15	\$1.88	20%	50%	\$103.48	0.12	0.12	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Paper Mfg	Process	Refrigeration - System Optimization	employee	New	3.00	15	\$1.32	20%	50%	\$45.27	0.20	0.20	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	176.88	10	\$25.93	9%	38%	\$19.67	9.34	9.34	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	132.66	12	\$39.52	9%	38%	\$35.32	9.11	9.11	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	132.66	10	\$41.20	9%	38%	\$41.66	8.42	8.42	PUMP_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	94.04	10	\$9.46	9%	38%	\$13.49	4.97	4.97	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	111.14	10	\$15.64	9%	38%	\$18.88	7.06	7.06	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	170.99	10	\$78.87	9%	38%	\$61.87	10.86	10.86	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	168.14	10	\$12.62	17%	50%	\$10.07	10.36	10.36	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	1.07	1.07	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.05	0.05	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	192.16	10	\$20.79	9%	15%	\$14.51	2.57	2.57	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	38.43	10	\$9.03	9%	38%	\$31.50	2.44	2.44	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	96.08	10	\$9.07	18%	75%	\$12.67	10.15	10.15	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	72.06	15	\$55.44	26%	45%	\$79.46	3.48	3.48	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.40	10	\$0.85	17%	50%	\$47.54	0.15	0.15	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	14.41	10	\$2.77	17%	50%	\$25.80	0.89	0.89	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	3.07	3.07	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	14.41	15	\$7.62	17%	50%	\$54.63	1.06	1.06	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	New	134.52	6	\$20.81	26%	45%	\$30.63	4.15	4.15	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	381.82	10	\$134.36	25%	45%	\$47.20	17.02	17.02	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	7.46	10	\$3.28	10%	50%	\$58.96	3.32	3.32	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	4.14	10	\$1.16	6%	25%	\$37.67	0.88	0.88	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	62.15	12	\$14.39	16%	25%	\$27.44	7.11	7.11	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	16.57	10	\$4.33	16%	36%	\$35.04	3.06	3.06	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	3,940.82	10	\$490.11	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	5,766.13	15	\$1,324.69	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	11,771.05	10	\$604.92	0%	0%	\$6.89	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,864.03	1	\$54.66	0%	0%	\$29.66	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	722.61	2	\$14.74	0%	0%	\$10.66	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	12.52	15	\$5.99	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	40.34	15	\$5.23	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	775.66	15	\$100.19	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	New	73.02	10	\$730.19	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	16.69	15	\$0.13	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	3.71	15	\$0.35	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	2.25	15	\$0.43	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	2.25	15	\$1.34	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.09	15	\$0.46	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	4.17	15	\$2.20	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	4.17	15	\$0.04	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	570.87	10	\$134.28	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	591.26	10	\$10.06	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	56.98	10	\$6.17	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	10.46	10	\$5.62	15%	40%	\$72.06	2.28	2.28	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	8.38	10	\$1.85	15%	29%	\$29.63	1.04	1.04	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	8.38	10	\$0.76	15%	25%	\$12.15	0.70	0.70	PAPER_EFFTREAT-Motors-7PLN-v5-1
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	1,019.42	10	\$100.20	15%	29%	\$13.19	25.37	25.37	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	0.09	5	\$0.01	15%	38%	\$31.86	0.01	0.01	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	9.10	1	\$0.38	15%	52%	\$42.49	0.96	0.96	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	2.85	10	\$9.58	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	5.72	10	\$9.58	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.21	10	\$9.58	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	1.95	10	\$9.58	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.50	10	\$9.58	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	62.15	10	\$9.58	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	New	4.19	10	\$9.58	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	1.23	10	\$9.58	15%	15%	\$16.24	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	New	8.24	3	\$92.62	3%	11%	\$145.85	0.01	0.01	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	New	16.51	3	\$92.62	3%	11%	\$145.85	0.01	0.01	IND_SEM-HVAC-AEG-1

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Paper Mfg	Ventilation	Strategic Energy Management	employee	New	0.60	3	\$92.62	3%	11%	\$145.85	0.01	0.01	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	5.64	3	\$92.62	3%	11%	\$145.85	0.05	0.05	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	1.44	3	\$92.62	3%	11%	\$145.85	0.01	0.01	IND_SEM-Lighting-AEG-1
Paper Mfg	Motors	Strategic Energy Management	employee	New	179.55	3	\$92.62	3%	11%	\$145.85	1.55	1.55	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	New	12.11	3	\$92.62	3%	11%	\$145.85	0.10	0.10	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	3.54	3	\$92.62	3%	11%	\$145.85	0.05	0.03	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	New	6.51	3	\$114.33	10%	35%	\$175.45	0.09	0.09	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	New	1.67	3	\$114.33	10%	35%	\$175.45	0.02	0.02	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	New	207.17	3	\$114.33	10%	35%	\$175.45	4.99	4.99	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	New	13.97	3	\$114.33	10%	35%	\$175.45	0.34	0.34	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	New	4.09	3	\$114.33	10%	35%	\$175.45	0.06	0.05	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	6.51	3	\$72.58	0%	0%	\$111.38	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	1.67	3	\$72.58	0%	0%	\$111.38	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	New	207.17	3	\$72.58	0%	0%	\$111.38	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	New	13.97	3	\$72.58	0%	0%	\$111.38	0.00	0.00	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	4.09	3	\$72.58	0%	0%	\$111.38	0.00	0.00	IND_RCX-Process-AEG-1

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Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	23.90	12	\$13.04	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	397.98	11	\$310.11	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	0.02	0.02	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.02	0.02	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.01	0.01	Building Energy Simulation Tool

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Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.01	0.01	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	0.06	0.06	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	0.03	0.03	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	0.03	0.03	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	0.00	5	\$0.40	18%	30%	\$19,598.56	0.03	0.03	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5

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Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	0.11	0.11	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	0.16	0.16	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	0.04	0.04	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	0.03	0.03	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.02	0.02	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.36	7%	33%	\$11,339.03	0.16	0.17	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.01	15	\$0.60	7%	33%	\$13,363.86	0.22	0.23	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	0.03	0.03	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	0.03	0.03	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	0.04	0.04	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	0.05	0.06	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	0.04	0.04	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	0.79	20	\$0.28	15%	20%	\$31.73	0.00	0.00	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.21	15	\$0.22	20%	50%	\$107.71	0.12	0.12	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	0.34	15	\$0.16	20%	50%	\$47.12	0.19	0.19	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	10.64	10	\$1.62	9%	38%	\$20.47	5.59	5.59	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	7.98	12	\$2.47	9%	38%	\$36.76	4.08	4.08	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	7.98	10	\$2.58	9%	38%	\$43.36	4.08	4.08	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	0.96	10	\$0.10	9%	38%	\$14.04	0.50	0.50	FAN_EQPTF-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	1.13	10	\$0.17	9%	38%	\$19.65	0.58	0.58	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	1.74	10	\$0.84	9%	38%	\$64.40	0.89	0.89	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	4.88	10	\$0.38	17%	50%	\$10.48	2.99	2.99	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	0.22	0.22	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.01	0.01	CMPAIR_RFRGDY-Motors-MEMD-v. 2014-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	5.58	10	\$0.63	9%	15%	\$15.11	0.60	0.60	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	1.12	10	\$0.27	9%	38%	\$32.79	0.57	0.57	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	2.79	10	\$0.27	18%	75%	\$13.18	2.93	2.93	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	2.09	15	\$1.68	26%	45%	\$82.70	0.71	0.71	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.07	10	\$0.03	17%	50%	\$49.48	0.04	0.04	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	0.42	10	\$0.08	17%	50%	\$26.85	0.26	0.26	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	0.73	0.73	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	0.42	15	\$0.23	17%	50%	\$56.86	0.26	0.26	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	Existing	3.91	6	\$0.63	26%	45%	\$31.88	1.33	1.33	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	2.34	10	\$0.86	25%	45%	\$49.13	0.84	0.84	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.17	10	\$0.07	10%	50%	\$58.96	0.60	0.60	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.09	10	\$0.03	6%	25%	\$37.67	0.16	0.16	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1.40	12	\$0.32	16%	25%	\$27.44	1.19	1.19	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	0.37	10	\$0.10	16%	36%	\$35.04	0.69	0.69	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	17.36	10	\$2.25	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	25.40	15	\$6.07	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	196.68	10	\$604.92	0%	0%	\$412.56	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	8.21	1	\$54.66	0%	0%	\$6,734.05	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	3.18	2	\$14.74	0%	0%	\$2,421.22	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	1.42	15	\$0.71	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	5.40	15	\$0.73	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	394.19	15	\$53.00	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	Existing	4.39	10	\$45.72	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	0.05	15	\$0.00	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	0.42	15	\$0.04	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	0.26	15	\$0.05	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.26	15	\$0.16	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.01	15	\$0.00	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.01	15	\$0.01	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.01	15	\$0.00	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	3.50	10	\$0.86	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3.63	10	\$0.06	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	2.10	10	\$0.24	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	0.42	10	\$0.23	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	0.34	10	\$0.08	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	0.34	10	\$0.03	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	6.25	10	\$0.64	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	0.00	5	\$0.00	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.06	1	\$0.00	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	0.15	10	\$0.26	15%	15%	\$16.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	0.33	10	\$0.26	15%	15%	\$16.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	0.01	10	\$0.26	15%	15%	\$16.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.03	10	\$0.26	15%	15%	\$16.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.01	10	\$0.26	15%	15%	\$16.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	1.40	10	\$0.26	15%	15%	\$16.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	0.17	10	\$0.26	15%	15%	\$16.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.02	10	\$0.26	15%	15%	\$16.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	0.45	3	\$2.49	3%	11%	\$146.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	0.95	3	\$2.49	3%	11%	\$146.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	0.04	3	\$2.49	3%	11%	\$146.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	0.09	3	\$2.49	3%	11%	\$146.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	0.02	3	\$2.49	3%	11%	\$146.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	4.04	3	\$2.49	3%	11%	\$146.30	0.14	0.14	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	0.49	3	\$2.49	3%	11%	\$146.30	0.02	0.02	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	0.06	3	\$2.49	3%	11%	\$146.30	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	0.11	3	\$2.66	0%	0%	\$175.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	0.02	3	\$2.66	0%	0%	\$175.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	Existing	4.66	3	\$2.66	0%	0%	\$175.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	Existing	0.57	3	\$2.66	0%	0%	\$175.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	0.07	3	\$2.66	0%	0%	\$175.64	0.00	0.00	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	0.11	3	\$1.69	5%	39%	\$111.50	0.05	0.06	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	0.02	3	\$1.69	5%	39%	\$111.50	0.01	0.01	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	4.66	3	\$1.69	5%	39%	\$111.50	2.69	2.69	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	Existing	0.57	3	\$1.69	5%	39%	\$111.50	0.33	0.33	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	0.07	3	\$1.69	5%	39%	\$111.50	0.07	0.05	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	1.44	12	\$0.82	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	23.94	11	\$19.42	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Petroleum Refining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.00	0.00	AEG-BEST

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Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.02	0.02	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.01	0.01	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.01	0.01	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	0.01	5	\$0.40	18%	30%	\$18,185.92	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	0.03	0.03	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	0.04	0.04	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.36	22%	41%	\$12,350.46	0.06	0.06	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.60	22%	41%	\$14,555.90	0.08	0.08	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.01	0.01	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.01	0.01	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.01	0.01	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.01	0.01	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.01	0.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	0.82	20	\$0.28	15%	20%	\$30.49	0.00	0.00	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	0.22	15	\$0.22	20%	50%	\$103.48	0.03	0.03	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	0.36	15	\$0.16	20%	50%	\$45.27	0.05	0.05	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	11.07	10	\$1.62	9%	38%	\$19.67	1.15	1.15	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	8.31	12	\$2.47	9%	38%	\$35.32	1.12	1.12	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	8.31	10	\$2.58	9%	38%	\$41.66	1.04	1.04	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	1.00	10	\$0.10	9%	38%	\$13.49	0.10	0.10	FAN_EQPTF-Motors-UN-v1.0-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	1.18	10	\$0.17	9%	38%	\$18.88	0.15	0.15	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	1.82	10	\$0.84	9%	38%	\$61.87	0.23	0.23	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	5.08	10	\$0.38	17%	50%	\$10.07	0.62	0.62	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.06	0.06	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	5.81	10	\$0.63	9%	15%	\$14.51	0.15	0.15	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	1.16	10	\$0.27	9%	38%	\$31.50	0.15	0.15	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	2.90	10	\$0.27	18%	75%	\$12.67	0.60	0.60	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	2.18	15	\$1.68	26%	45%	\$79.46	0.21	0.21	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.07	10	\$0.03	17%	50%	\$47.54	0.01	0.01	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	0.44	10	\$0.08	17%	50%	\$25.80	0.05	0.05	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	0.18	0.18	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	0.44	15	\$0.23	17%	50%	\$54.63	0.06	0.06	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	New	4.07	6	\$0.63	26%	45%	\$30.63	0.25	0.25	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	2.44	10	\$0.86	25%	45%	\$47.20	0.21	0.21	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.17	10	\$0.07	10%	50%	\$58.96	0.15	0.15	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.09	10	\$0.03	6%	25%	\$37.67	0.04	0.04	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	1.40	12	\$0.32	16%	25%	\$27.44	0.31	0.31	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	0.37	10	\$0.10	16%	36%	\$35.04	0.14	0.14	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	New	18.06	10	\$2.25	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	New	26.43	15	\$6.07	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	204.72	10	\$604.92	0%	0%	\$396.38	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	8.54	1	\$54.66	0%	0%	\$6,469.85	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	3.31	2	\$14.74	0%	0%	\$2,326.23	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	1.48	15	\$0.71	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.62	15	\$0.73	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	410.29	15	\$53.00	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	New	4.57	10	\$45.72	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	0.05	15	\$0.00	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	0.44	15	\$0.04	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	0.27	15	\$0.05	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.27	15	\$0.16	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.01	15	\$0.00	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.01	15	\$0.01	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.01	15	\$0.00	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	3.64	10	\$0.86	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3.77	10	\$0.06	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	2.19	10	\$0.24	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	0.42	10	\$0.23	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	0.34	10	\$0.08	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	0.34	10	\$0.03	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	6.51	10	\$0.64	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	0.00	5	\$0.00	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.06	1	\$0.00	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	0.17	10	\$0.26	15%	15%	\$16.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	0.33	10	\$0.26	15%	15%	\$16.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	0.01	10	\$0.26	15%	15%	\$16.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	0.03	10	\$0.26	15%	15%	\$16.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	0.01	10	\$0.26	15%	15%	\$16.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	1.40	10	\$0.26	15%	15%	\$16.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	0.17	10	\$0.26	15%	15%	\$16.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	0.02	10	\$0.26	15%	15%	\$16.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	0.48	3	\$2.49	3%	11%	\$145.32	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	New	0.96	3	\$2.49	3%	11%	\$145.32	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	0.03	3	\$2.49	3%	11%	\$145.32	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	0.08	3	\$2.49	3%	11%	\$145.32	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	0.02	3	\$2.49	3%	11%	\$145.32	0.00	0.00	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Motors	Strategic Energy Management	employee	New	4.04	3	\$2.49	3%	11%	\$145.32	0.01	0.01	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	New	0.49	3	\$2.49	3%	11%	\$145.32	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	0.06	3	\$2.49	3%	11%	\$145.32	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	New	0.09	3	\$2.66	5%	39%	\$176.07	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	0.02	3	\$2.66	5%	39%	\$176.07	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	New	4.66	3	\$2.66	5%	39%	\$176.07	0.30	0.30	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	New	0.57	3	\$2.66	5%	39%	\$176.07	0.04	0.04	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	New	0.07	3	\$2.66	5%	39%	\$176.07	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	0.09	3	\$1.69	0%	0%	\$111.77	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	0.02	3	\$1.69	0%	0%	\$111.77	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	New	4.66	3	\$1.69	0%	0%	\$111.77	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	New	0.57	3	\$1.69	0%	0%	\$111.77	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	0.07	3	\$1.69	0%	0%	\$111.77	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	New	1.50	12	\$0.82	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1

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Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	24.92	11	\$19.42	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	1.21	1.24	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.88	0.89	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.53	0.54	Building Energy Simulation Tool

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Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.47	0.48	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.04	0.04	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.59	0.59	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.36	0.36	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.15	0.16	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.08	0.08	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.05	0.05	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.39	0.40	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	3.27	3.34	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	1.59	1.62	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.29	0.30	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	1.31	1.35	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	0.52	5	\$0.40	18%	30%	\$182.41	1.43	1.48	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.18	0.19	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	5.77	5.95	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	8.15	8.20	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.41	0.43	RTU_MNT-Cooling-PGE-R2-1
Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	2.25	2.29	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	1.64	1.64	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.99	1.00	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.39	15	\$0.36	7%	33%	\$105.53	10.02	10.67	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.54	15	\$0.60	7%	33%	\$124.38	14.03	14.93	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.05	0.06	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	1.95	2.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	1.99	2.04	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	2.35	2.47	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	3.42	3.60	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	2.34	2.46	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	136.09	20	\$48.70	15%	20%	\$31.73	0.35	0.35	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	15.14	15	\$15.79	20%	50%	\$107.71	1.73	1.73	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	24.22	15	\$11.05	20%	50%	\$47.12	2.77	2.77	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	214.42	10	\$32.72	9%	38%	\$20.47	23.50	23.50	PUMP_EQPT-Motors-7PLN-v5-1

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Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	160.81	12	\$49.87	9%	38%	\$36.76	17.16	17.16	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	160.81	10	\$51.98	9%	38%	\$43.36	17.16	17.16	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	165.96	10	\$17.37	9%	38%	\$14.04	18.19	18.19	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	196.13	10	\$28.73	9%	38%	\$19.65	20.93	20.93	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	301.74	10	\$144.86	9%	38%	\$64.40	32.20	32.20	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	95.05	10	\$7.43	17%	50%	\$10.48	12.15	12.15	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	0.89	0.89	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.06	0.06	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	108.63	10	\$12.23	9%	15%	\$15.11	2.44	2.44	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	21.73	10	\$5.31	9%	38%	\$32.79	2.32	2.32	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	54.31	10	\$5.34	18%	75%	\$13.18	11.90	11.90	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	40.73	15	\$32.62	26%	45%	\$82.70	2.90	2.90	CMPAIR_VSD-Motors-UN-v1.0-3

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Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.36	10	\$0.50	17%	50%	\$49.48	0.17	0.17	CMPAIR_LPDPILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	8.15	10	\$1.63	17%	50%	\$26.85	1.04	1.04	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	2.95	2.95	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	8.15	15	\$4.48	17%	50%	\$56.86	1.04	1.04	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	Existing	76.04	6	\$12.25	26%	45%	\$31.88	5.41	5.41	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,169.71	10	\$428.42	25%	45%	\$49.13	87.61	87.61	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	16.55	10	\$7.28	10%	50%	\$58.96	12.40	12.40	MTR_GRWND<100HP-Motors-7PLN-v5-17
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	9.20	10	\$2.58	6%	25%	\$37.67	3.27	3.27	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	137.94	12	\$31.93	16%	25%	\$27.44	24.54	24.54	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	36.78	10	\$9.61	16%	36%	\$35.04	14.11	14.11	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	2,988.92	10	\$386.90	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	4,373.34	15	\$1,045.74	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100

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Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,585.44	10	\$604.92	0%	0%	\$51.18	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,413.78	1	\$54.66	0%	0%	\$39.10	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	548.07	2	\$14.74	0%	0%	\$14.06	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	100.92	15	\$50.23	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	32.82	15	\$4.43	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	112.05	15	\$15.06	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	Existing	88.51	10	\$921.29	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	22.64	15	\$0.18	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	29.92	15	\$2.97	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	18.17	15	\$3.59	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	18.17	15	\$11.28	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.83	15	\$0.65	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	5.66	15	\$3.11	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	5.66	15	\$0.06	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	1,748.88	10	\$428.16	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,811.34	10	\$32.07	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	1,480.17	10	\$166.85	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	165.57	10	\$88.94	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	132.62	10	\$29.30	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	132.62	10	\$12.01	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	3,123.01	10	\$319.51	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	1.48	5	\$0.21	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	27.88	1	\$1.22	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	38.69	10	\$42.30	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	81.88	10	\$42.30	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	3.11	10	\$42.30	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	9.67	10	\$42.30	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.25	10	\$42.30	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	137.94	10	\$42.30	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	66.31	10	\$42.30	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	8.87	10	\$42.30	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	111.78	3	\$408.95	3%	11%	\$145.75	0.14	0.14	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	236.54	3	\$408.95	3%	11%	\$145.75	0.10	0.10	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	8.97	3	\$408.95	3%	11%	\$145.75	0.06	0.06	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	27.93	3	\$408.95	3%	11%	\$145.75	0.17	0.18	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	6.51	3	\$408.95	3%	11%	\$145.75	0.04	0.04	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	398.49	3	\$408.95	3%	11%	\$145.75	2.83	2.83	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	191.56	3	\$408.95	3%	11%	\$145.75	1.36	1.36	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	25.62	3	\$408.95	3%	11%	\$145.75	0.31	0.24	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	32.22	3	\$357.46	0%	0%	\$169.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	7.51	3	\$357.46	0%	0%	\$169.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	459.79	3	\$357.46	0%	0%	\$169.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	Existing	221.03	3	\$357.46	0%	0%	\$169.86	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	29.56	3	\$357.46	0%	0%	\$169.86	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	32.22	3	\$226.92	10%	40%	\$107.83	2.92	3.12	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	7.51	3	\$226.92	10%	40%	\$107.83	0.74	0.76	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	459.79	3	\$226.92	10%	40%	\$107.83	48.93	48.93	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	221.03	3	\$226.92	10%	40%	\$107.83	23.52	23.52	IND_RCX-Process-AEG-1

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Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	29.56	3	\$226.92	10%	40%	\$107.83	5.43	4.22	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	28.97	12	\$16.45	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	482.44	11	\$391.27	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.44	0.45	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.30	0.30	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.18	0.18	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.17	0.17	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.20	0.20	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.12	0.12	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.05	0.05	Building Energy Simulation Tool

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Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.03	0.03	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.08	0.08	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.81	0.81	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.39	0.39	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.08	0.08	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.28	0.28	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	0.55	5	\$0.40	18%	30%	\$169.26	0.18	0.18	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.04	0.04	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	1.51	1.52	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	1.98	1.98	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.04	0.04	RTU_MNT-Cooling-PGE-R2-1

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Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.25	0.25	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.17	0.17	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.10	0.10	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.33	15	\$0.36	22%	41%	\$114.95	3.59	3.61	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.46	15	\$0.60	22%	41%	\$135.47	5.02	5.05	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.42	0.43	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.50	0.50	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.43	0.43	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.34	0.34	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.35	0.36	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	141.64	20	\$48.70	15%	20%	\$30.49	0.10	0.10	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	15.76	15	\$15.79	20%	50%	\$103.48	0.43	0.43	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	25.21	15	\$11.05	20%	50%	\$45.27	0.68	0.68	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	223.17	10	\$32.72	9%	38%	\$19.67	4.84	4.84	PUMP_EQPT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	167.38	12	\$49.87	9%	38%	\$35.32	4.71	4.71	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	167.38	10	\$51.98	9%	38%	\$41.66	4.36	4.36	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	172.73	10	\$17.37	9%	38%	\$13.49	3.74	3.74	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	204.14	10	\$28.73	9%	38%	\$18.88	5.32	5.32	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	314.06	10	\$144.86	9%	38%	\$61.87	8.18	8.18	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	98.93	10	\$7.43	17%	50%	\$10.07	2.50	2.50	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.26	0.26	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1

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Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	113.06	10	\$12.23	9%	15%	\$14.51	0.62	0.62	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	22.61	10	\$5.31	9%	38%	\$31.50	0.59	0.59	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	56.53	10	\$5.34	18%	75%	\$12.67	2.45	2.45	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	42.40	15	\$32.62	26%	45%	\$79.46	0.84	0.84	CMPAIR_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.41	10	\$0.50	17%	50%	\$47.54	0.04	0.04	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	8.48	10	\$1.63	17%	50%	\$25.80	0.21	0.21	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	0.74	0.74	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	8.48	15	\$4.48	17%	50%	\$54.63	0.26	0.26	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	New	79.14	6	\$12.25	26%	45%	\$30.63	1.00	1.00	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	1,217.48	10	\$428.42	25%	45%	\$47.20	22.26	22.26	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	16.55	10	\$7.28	10%	50%	\$58.96	3.03	3.03	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	9.20	10	\$2.58	6%	25%	\$37.67	0.80	0.80	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	137.94	12	\$31.93	16%	25%	\$27.44	6.47	6.47	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	36.78	10	\$9.61	16%	36%	\$35.04	2.79	2.79	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	New	3,110.98	10	\$386.90	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	New	4,551.92	15	\$1,045.74	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,650.18	10	\$604.92	0%	0%	\$49.17	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,471.51	1	\$54.66	0%	0%	\$37.57	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	570.45	2	\$14.74	0%	0%	\$13.51	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	105.04	15	\$50.23	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	34.16	15	\$4.43	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	116.63	15	\$15.06	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	New	92.13	10	\$921.29	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1

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Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	23.57	15	\$0.18	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	31.14	15	\$2.97	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	18.91	15	\$3.59	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	18.91	15	\$11.28	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.95	15	\$0.65	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	5.89	15	\$3.11	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	5.89	15	\$0.06	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	1,820.30	10	\$428.16	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,885.31	10	\$32.07	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	1,540.61	10	\$166.85	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	165.57	10	\$88.94	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	132.62	10	\$29.30	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1

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Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	132.62	10	\$12.01	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	3,250.54	10	\$319.51	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	1.48	5	\$0.21	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	29.02	1	\$1.22	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	41.32	10	\$42.30	15%	15%	\$16.09	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	82.85	10	\$42.30	15%	15%	\$16.09	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	3.00	10	\$42.30	15%	15%	\$16.09	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	8.21	10	\$42.30	15%	15%	\$16.09	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	2.10	10	\$42.30	15%	15%	\$16.09	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	137.94	10	\$42.30	15%	15%	\$16.09	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	66.31	10	\$42.30	15%	15%	\$16.09	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	8.72	10	\$42.30	15%	15%	\$16.09	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	119.38	3	\$408.95	3%	11%	\$144.44	0.01	0.01	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	239.33	3	\$408.95	3%	11%	\$144.44	0.01	0.01	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	8.68	3	\$408.95	3%	11%	\$144.44	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	23.72	3	\$408.95	3%	11%	\$144.44	0.01	0.01	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	6.08	3	\$408.95	3%	11%	\$144.44	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	398.49	3	\$408.95	3%	11%	\$144.44	0.13	0.13	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	191.56	3	\$408.95	3%	11%	\$144.44	0.06	0.06	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	25.18	3	\$408.95	3%	11%	\$144.44	0.01	0.01	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	27.36	3	\$357.46	10%	40%	\$170.92	0.19	0.19	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	7.01	3	\$357.46	10%	40%	\$170.92	0.05	0.05	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	New	459.79	3	\$357.46	10%	40%	\$170.92	5.45	5.45	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	New	221.03	3	\$357.46	10%	40%	\$170.92	2.62	2.62	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	29.05	3	\$357.46	10%	40%	\$170.92	0.21	0.17	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	27.36	3	\$226.92	0%	0%	\$108.50	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	7.01	3	\$226.92	0%	0%	\$108.50	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	459.79	3	\$226.92	0%	0%	\$108.50	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	221.03	3	\$226.92	0%	0%	\$108.50	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	29.05	3	\$226.92	0%	0%	\$108.50	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	30.15	12	\$16.45	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	502.14	11	\$391.27	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Stone Clay Glass Products	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	1.04	1.06	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.76	0.76	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.46	0.46	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.40	0.41	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.03	0.03	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.50	0.51	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.30	0.31	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.13	0.13	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.07	0.07	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.34	0.34	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	2.80	2.86	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	1.36	1.39	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.25	0.26	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	1.12	1.16	AEG-BEST

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Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.02	5	\$0.40	18%	30%	\$4,782.00	1.23	1.27	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.16	0.16	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	4.94	5.09	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	6.97	7.02	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.35	0.37	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	1.92	1.96	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	1.40	1.41	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.85	0.86	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.01	15	\$0.36	7%	33%	\$2,766.70	7.61	8.10	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.02	15	\$0.60	7%	33%	\$3,260.75	10.65	11.34	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.04	0.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	1.48	1.51	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	1.51	1.55	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	1.78	1.88	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	2.60	2.73	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	1.77	1.87	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	54.48	20	\$19.49	15%	20%	\$31.73	0.17	0.17	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	1.58	15	\$1.65	20%	50%	\$107.71	1.11	1.11	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	2.53	15	\$1.15	20%	50%	\$47.12	1.78	1.78	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	6.85	10	\$1.04	9%	38%	\$20.47	4.61	4.61	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	5.14	12	\$1.59	9%	38%	\$36.76	3.37	3.37	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	5.14	10	\$1.66	9%	38%	\$43.36	3.37	3.37	PUMP_VSD-Motors-UN-v1.0-3

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Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	1.80	10	\$0.19	9%	38%	\$14.04	1.21	1.21	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	2.13	10	\$0.31	9%	38%	\$19.65	1.39	1.39	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	3.27	10	\$1.57	9%	38%	\$64.40	2.14	2.14	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	12.10	10	\$0.95	17%	50%	\$10.48	9.51	9.51	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	0.70	0.70	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.05	0.05	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	13.83	10	\$1.56	9%	15%	\$15.11	1.91	1.91	E3T
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	2.77	10	\$0.68	9%	38%	\$32.79	1.81	1.81	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	6.92	10	\$0.68	18%	75%	\$13.18	9.32	9.32	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	5.19	15	\$4.15	26%	45%	\$82.70	2.27	2.27	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.17	10	\$0.06	17%	50%	\$49.48	0.14	0.14	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1.04	10	\$0.21	17%	50%	\$26.85	0.82	0.82	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3

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Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	2.31	2.31	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1.04	15	\$0.57	17%	50%	\$56.86	0.82	0.82	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	9.68	6	\$1.56	26%	45%	\$31.88	4.23	4.23	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	31.28	10	\$11.46	25%	45%	\$49.13	14.40	14.40	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.46	10	\$0.20	10%	50%	\$58.96	2.12	2.12	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.26	10	\$0.07	6%	25%	\$37.67	0.56	0.56	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	3.85	12	\$0.89	16%	25%	\$27.44	4.21	4.21	2015-mdu-irp-report--volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	1.03	10	\$0.27	16%	36%	\$35.04	2.42	2.42	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,196.53	10	\$154.89	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	1,750.75	15	\$418.63	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	253.13	10	\$604.92	0%	0%	\$320.56	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	565.97	1	\$54.66	0%	0%	\$97.68	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	219.40	2	\$14.74	0%	0%	\$35.12	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	10.53	15	\$5.24	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	25.18	15	\$3.40	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	34.30	15	\$4.61	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	2.83	10	\$29.42	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	4.58	15	\$0.04	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	3.12	15	\$0.31	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	1.90	15	\$0.37	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	1.90	15	\$1.18	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.57	15	\$0.13	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	1.14	15	\$0.63	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	1.14	15	\$0.01	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1

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Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	46.77	10	\$11.45	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	48.44	10	\$0.86	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	42.93	10	\$4.84	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	6.54	10	\$3.51	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	5.24	10	\$1.16	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	5.24	10	\$0.47	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	83.51	10	\$8.54	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.06	5	\$0.01	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.75	1	\$0.03	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	5.39	10	\$3.14	15%	15%	\$16.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	11.40	10	\$3.14	15%	15%	\$16.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.43	10	\$3.14	15%	15%	\$16.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	1.19	10	\$3.14	15%	15%	\$16.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.28	10	\$3.14	15%	15%	\$16.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	3.85	10	\$3.14	15%	15%	\$16.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	2.62	10	\$3.14	15%	15%	\$16.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.71	10	\$3.14	15%	15%	\$16.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	15.57	3	\$30.40	3%	11%	\$146.69	0.12	0.12	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	32.95	3	\$30.40	3%	11%	\$146.69	0.09	0.09	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	1.25	3	\$30.40	3%	11%	\$146.69	0.05	0.05	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	3.45	3	\$30.40	3%	11%	\$146.69	0.13	0.14	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.80	3	\$30.40	3%	11%	\$146.69	0.03	0.03	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	11.11	3	\$30.40	3%	11%	\$146.69	0.48	0.48	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	7.57	3	\$30.40	3%	11%	\$146.69	0.33	0.33	IND_SEM-Process-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	2.05	3	\$30.40	3%	11%	\$146.69	0.15	0.12	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	3.98	3	\$13.19	0%	0%	\$162.25	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	0.93	3	\$13.19	0%	0%	\$162.25	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	12.82	3	\$13.19	0%	0%	\$162.25	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	8.73	3	\$13.19	0%	0%	\$162.25	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	2.37	3	\$13.19	0%	0%	\$162.25	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	3.98	3	\$8.37	5%	39%	\$103.00	2.51	2.68	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	0.93	3	\$8.37	5%	39%	\$103.00	0.64	0.66	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	12.82	3	\$8.37	5%	39%	\$103.00	9.51	9.51	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	8.73	3	\$8.37	5%	39%	\$103.00	6.47	6.47	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	2.37	3	\$8.37	5%	39%	\$103.00	3.03	2.35	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	0.92	12	\$0.53	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	15.41	11	\$12.49	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.38	0.38	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.26	0.26	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.15	0.15	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.15	0.15	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.17	0.17	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.10	0.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.05	0.05	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool

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Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.07	0.07	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.69	0.69	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.34	0.34	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.07	0.07	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.24	0.24	AEG-BEST
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.02	5	\$0.40	18%	30%	\$4,437.32	0.15	0.15	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.04	0.04	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	1.30	1.30	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	1.70	1.70	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.21	0.21	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.14	0.14	STAT_WIFI-AII-7PLN-v2-1

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Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.08	0.08	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.01	15	\$0.36	22%	41%	\$3,247.27	2.52	2.53	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.02	15	\$0.60	22%	41%	\$3,827.14	3.53	3.55	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.21	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.04	11	\$0.00	15%	50%	\$7.63	0.31	0.31	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,159.30	0.37	0.37	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$88.16	0.32	0.32	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$99.40	0.25	0.25	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,403.61	0.26	0.27	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	56.70	20	\$19.49	15%	20%	\$30.49	0.05	0.05	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	1.64	15	\$1.65	20%	50%	\$103.48	0.27	0.27	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	2.63	15	\$1.15	20%	50%	\$45.27	0.44	0.44	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	7.13	10	\$1.04	9%	38%	\$19.67	0.95	0.95	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	5.34	12	\$1.59	9%	38%	\$35.32	0.93	0.93	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	5.34	10	\$1.66	9%	38%	\$41.66	0.86	0.86	PUMP_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	1.87	10	\$0.19	9%	38%	\$13.49	0.25	0.25	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	2.21	10	\$0.31	9%	38%	\$18.88	0.35	0.35	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	3.40	10	\$1.57	9%	38%	\$61.87	0.54	0.54	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	12.60	10	\$0.95	17%	50%	\$10.07	1.96	1.96	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.20	0.20	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	14.40	10	\$1.56	9%	15%	\$14.51	0.49	0.49	E3T

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	2.88	10	\$0.68	9%	38%	\$31.50	0.46	0.46	CMPAIR_SYSCtrl-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	7.20	10	\$0.68	18%	75%	\$12.67	1.92	1.92	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	5.40	15	\$4.15	26%	45%	\$79.46	0.66	0.66	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.18	10	\$0.06	17%	50%	\$47.54	0.03	0.03	CMPAIR_LPDRFLT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1.08	10	\$0.21	17%	50%	\$25.80	0.17	0.17	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	0.58	0.58	CMPAIR_OAIR-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1.08	15	\$0.57	17%	50%	\$54.63	0.20	0.20	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	10.08	6	\$1.56	26%	45%	\$30.63	0.78	0.78	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	32.56	10	\$11.46	25%	45%	\$47.20	3.66	3.66	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.46	10	\$0.20	10%	50%	\$58.96	0.52	0.52	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.26	10	\$0.07	6%	25%	\$37.67	0.14	0.14	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	3.85	12	\$0.89	16%	25%	\$27.44	1.11	1.11	2015-mdu-irp-report--volume-iii.pdf

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	1.03	10	\$0.27	16%	36%	\$35.04	0.48	0.48	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	1,245.40	10	\$154.89	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	1,822.24	15	\$418.63	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	263.47	10	\$604.92	0%	0%	\$307.99	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	589.08	1	\$54.66	0%	0%	\$93.85	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	228.36	2	\$14.74	0%	0%	\$33.74	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	10.96	15	\$5.24	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	26.21	15	\$3.40	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	35.70	15	\$4.61	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	2.94	10	\$29.42	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	4.76	15	\$0.04	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	3.25	15	\$0.31	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	1.97	15	\$0.37	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	1.97	15	\$1.18	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.60	15	\$0.13	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	1.19	15	\$0.63	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	1.19	15	\$0.01	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	48.68	10	\$11.45	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	50.42	10	\$0.86	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	44.68	10	\$4.84	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	6.54	10	\$3.51	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	5.24	10	\$1.16	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	5.24	10	\$0.47	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	86.93	10	\$8.54	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1

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Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.06	5	\$0.01	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.78	1	\$0.03	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	5.76	10	\$3.14	15%	15%	\$16.07	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	11.54	10	\$3.14	15%	15%	\$16.07	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.42	10	\$3.14	15%	15%	\$16.07	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	0.95	10	\$3.14	15%	15%	\$16.07	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.25	10	\$3.14	15%	15%	\$16.07	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	3.85	10	\$3.14	15%	15%	\$16.07	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	2.62	10	\$3.14	15%	15%	\$16.07	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	0.70	10	\$3.14	15%	15%	\$16.07	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	16.63	3	\$30.40	3%	11%	\$144.34	0.01	0.01	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	33.34	3	\$30.40	3%	11%	\$144.34	0.00	0.00	IND_SEM-HVAC-AEG-1

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Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	1.21	3	\$30.40	3%	11%	\$144.34	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	2.73	3	\$30.40	3%	11%	\$144.34	0.01	0.01	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.73	3	\$30.40	3%	11%	\$144.34	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	11.11	3	\$30.40	3%	11%	\$144.34	0.02	0.02	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	7.57	3	\$30.40	3%	11%	\$144.34	0.02	0.02	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	2.02	3	\$30.40	3%	11%	\$144.34	0.01	0.00	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	3.15	3	\$13.19	5%	39%	\$166.39	0.15	0.15	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	0.85	3	\$13.19	5%	39%	\$166.39	0.04	0.04	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	New	12.82	3	\$13.19	5%	39%	\$166.39	1.06	1.06	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	New	8.73	3	\$13.19	5%	39%	\$166.39	0.72	0.72	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	2.33	3	\$13.19	5%	39%	\$166.39	0.12	0.10	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	3.15	3	\$8.37	0%	0%	\$105.63	0.00	0.00	IND_RCX-Motors-AEG-1

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Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	0.85	3	\$8.37	0%	0%	\$105.63	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	12.82	3	\$8.37	0%	0%	\$105.63	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	8.73	3	\$8.37	0%	0%	\$105.63	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	2.33	3	\$8.37	0%	0%	\$105.63	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	0.96	12	\$0.53	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	16.03	11	\$12.49	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	0.61	0.62	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.44	0.44	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.27	0.27	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.24	0.24	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.02	0.02	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.01	0.01	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.29	0.30	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.18	0.18	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.08	0.08	Building Energy Simulation Tool

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Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.04	0.04	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.03	0.03	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.20	0.20	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	1.63	1.67	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	0.79	0.81	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.15	0.15	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	0.65	0.68	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.08	5	\$0.40	18%	30%	\$1,167.37	0.72	0.74	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.09	0.09	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	2.89	2.98	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	4.08	4.10	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.21	0.21	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	1.12	1.15	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	0.82	0.82	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.49	0.50	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.06	15	\$0.36	7%	33%	\$675.40	5.68	6.05	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.08	15	\$0.60	7%	33%	\$796.01	7.95	8.47	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.03	0.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	1.10	1.13	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	1.13	1.16	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	1.33	1.40	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	1.94	2.05	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	1.33	1.40	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	106.25	20	\$38.02	15%	20%	\$31.73	0.20	0.20	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$39.97	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$27.97	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	887.18	10	\$135.39	9%	38%	\$20.47	55.09	55.09	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	665.38	12	\$206.34	9%	38%	\$36.76	40.24	40.24	PUMP_SYSOPT-Motors-UN-v1.0-5

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Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	665.38	10	\$215.06	9%	38%	\$43.36	40.24	40.24	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	1,201.33	10	\$125.71	9%	38%	\$14.04	74.60	74.60	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	1,419.75	10	\$208.00	9%	38%	\$19.65	85.86	85.86	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	2,184.24	10	\$1,048.58	9%	38%	\$64.40	132.10	132.10	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	81.78	10	\$6.39	17%	50%	\$10.48	5.92	5.92	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	0.43	0.43	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.03	0.03	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	93.46	10	\$10.52	9%	15%	\$15.11	1.19	1.19	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	18.69	10	\$4.57	9%	38%	\$32.79	1.13	1.13	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	46.73	10	\$4.59	18%	75%	\$13.18	5.80	5.80	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	35.05	15	\$28.06	26%	45%	\$82.70	1.41	1.41	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.17	10	\$0.43	17%	50%	\$49.48	0.08	0.08	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	7.01	10	\$1.40	17%	50%	\$26.85	0.51	0.51	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	1.44	1.44	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	7.01	15	\$3.86	17%	50%	\$56.86	0.51	0.51	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Wastewater	Motors	Compressed Air - End Use Optimization	employee	Existing	65.42	6	\$10.54	26%	45%	\$31.88	2.64	2.64	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	195.44	10	\$71.58	25%	45%	\$49.13	8.29	8.29	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	30.53	10	\$13.42	10%	50%	\$58.96	12.96	12.96	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	16.96	10	\$4.76	6%	25%	\$37.67	3.42	3.42	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	254.42	12	\$58.90	16%	25%	\$27.44	25.64	25.64	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	67.85	10	\$17.72	16%	36%	\$35.04	14.75	14.75	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	Existing	2,333.65	10	\$302.08	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	Existing	3,414.55	15	\$816.48	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	5,247.99	10	\$604.92	0%	0%	\$15.46	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,103.83	1	\$54.66	0%	0%	\$50.08	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	427.91	2	\$14.74	0%	0%	\$18.01	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$127.18	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	12.65	15	\$1.71	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	183.12	15	\$24.62	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Wastewater	Motors	Automatic Milker Takeoffs	Cows	Existing	366.24	10	\$3,811.97	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$1.62	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$7.53	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$9.09	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$28.55	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$5.82	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$28.10	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$0.56	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	292.21	10	\$71.54	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	302.65	10	\$5.36	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$25.92	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	161.96	10	\$87.00	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	129.73	10	\$28.66	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	129.73	10	\$11.75	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	521.80	10	\$53.38	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	1.45	5	\$0.20	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	4.66	1	\$0.20	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	34.16	10	\$48.17	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	72.29	10	\$48.17	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	2.74	10	\$48.17	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	9.68	10	\$48.17	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.26	10	\$48.17	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	254.42	10	\$48.17	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	Existing	12.97	10	\$48.17	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	8.66	10	\$48.17	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	Existing	98.69	3	\$465.77	3%	11%	\$145.76	0.58	0.60	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	Existing	208.84	3	\$465.77	3%	11%	\$145.76	0.44	0.44	IND_SEM-HVAC-AEG-1
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	7.92	3	\$465.77	3%	11%	\$145.76	0.26	0.27	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	27.97	3	\$465.77	3%	11%	\$145.76	0.81	0.87	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	6.52	3	\$465.77	3%	11%	\$145.76	0.21	0.21	IND_SEM-Lighting-AEG-1

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Wastewater	Motors	Strategic Energy Management	employee	Existing	735.00	3	\$465.77	3%	11%	\$145.76	25.12	25.12	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	Existing	37.48	3	\$465.77	3%	11%	\$145.76	1.28	1.28	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	25.01	3	\$465.77	3%	11%	\$145.76	1.47	1.15	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	Existing	32.27	3	\$461.69	0%	0%	\$171.84	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	Existing	7.52	3	\$461.69	0%	0%	\$171.84	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	Existing	848.07	3	\$461.69	0%	0%	\$171.84	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	Existing	43.24	3	\$461.69	0%	0%	\$171.84	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	Existing	28.85	3	\$461.69	0%	0%	\$171.84	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	32.27	3	\$293.09	5%	39%	\$109.09	1.88	2.00	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	7.52	3	\$293.09	5%	39%	\$109.09	0.48	0.49	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	Existing	848.07	3	\$293.09	5%	39%	\$109.09	57.96	57.96	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	Existing	43.24	3	\$293.09	5%	39%	\$109.09	2.96	2.96	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	28.85	3	\$293.09	5%	39%	\$109.09	3.40	2.64	IND_RCX-Process-AEG-1
Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	119.86	12	\$68.06	15%	35%	\$67.32	5.09	5.09	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,996.15	11	\$1,618.95	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.22	0.22	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.15	0.15	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.09	0.09	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.09	0.09	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool

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Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.10	0.10	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.06	0.06	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.03	0.03	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.04	0.04	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.40	0.40	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.20	0.20	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.04	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.14	0.14	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.09	5	\$0.40	18%	30%	\$1,083.23	0.09	0.09	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.02	0.02	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	0.76	0.76	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	0.99	0.99	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.12	0.12	STAT_WIFI-All-7PLN-v2-1

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Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.08	0.08	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.05	0.05	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.05	15	\$0.36	22%	41%	\$735.64	2.04	2.05	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.07	15	\$0.60	22%	41%	\$867.01	2.85	2.87	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.24	0.24	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.28	0.29	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.24	0.25	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.19	0.19	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.20	0.20	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	New	110.59	20	\$38.02	15%	20%	\$30.49	0.06	0.06	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$39.97	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$27.97	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	923.41	10	\$135.39	9%	38%	\$19.67	11.34	11.34	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	New	692.56	12	\$206.34	9%	38%	\$35.32	11.05	11.05	PUMP_SYSOPT-Motors-UN-v1.0-5
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	692.56	10	\$215.06	9%	38%	\$41.66	10.22	10.22	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	1,250.39	10	\$125.71	9%	38%	\$13.49	15.35	15.35	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	New	1,477.73	10	\$208.00	9%	38%	\$18.88	21.82	21.82	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	2,273.43	10	\$1,048.58	9%	38%	\$61.87	33.56	33.56	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	85.11	10	\$6.39	17%	50%	\$10.07	1.22	1.22	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.13	0.13	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	97.27	10	\$10.52	9%	15%	\$14.51	0.30	0.30	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	New	19.45	10	\$4.57	9%	38%	\$31.50	0.29	0.29	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	48.64	10	\$4.59	18%	75%	\$12.67	1.19	1.19	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	36.48	15	\$28.06	26%	45%	\$79.46	0.41	0.41	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.22	10	\$0.43	17%	50%	\$47.54	0.02	0.02	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	7.30	10	\$1.40	17%	50%	\$25.80	0.10	0.10	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	0.36	0.36	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	7.30	15	\$3.86	17%	50%	\$54.63	0.13	0.13	CMPAIR_STORAGE-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - End Use Optimization	employee	New	68.09	6	\$10.54	26%	45%	\$30.63	0.49	0.49	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	203.42	10	\$71.58	25%	45%	\$47.20	2.11	2.11	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	30.53	10	\$13.42	10%	50%	\$58.96	3.16	3.16	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	16.96	10	\$4.76	6%	25%	\$37.67	0.83	0.83	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	254.42	12	\$58.90	16%	25%	\$27.44	6.77	6.77	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	67.85	10	\$17.72	16%	36%	\$35.04	2.92	2.92	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	New	2,428.94	10	\$302.08	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	New	3,553.98	15	\$816.48	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	5,462.30	10	\$604.92	0%	0%	\$14.86	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,148.90	1	\$54.66	0%	0%	\$48.12	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	445.38	2	\$14.74	0%	0%	\$17.30	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$127.18	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	190.60	15	\$24.62	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Wastewater	Motors	Automatic Milker Takeoffs	Cows	New	381.20	10	\$3,811.97	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$1.62	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$7.53	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$9.09	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$28.55	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$5.82	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$28.10	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$0.56	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	New	304.14	10	\$71.54	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	315.01	10	\$5.36	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$25.92	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Wastewater	Process	Paper: Premium Control Large Material	employee	New	161.96	10	\$87.00	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	129.73	10	\$28.66	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	129.73	10	\$11.75	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	543.11	10	\$53.38	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	New	1.45	5	\$0.20	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	4.85	1	\$0.20	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	New	36.48	10	\$48.17	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	New	73.14	10	\$48.17	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	New	2.65	10	\$48.17	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	8.22	10	\$48.17	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	2.11	10	\$48.17	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	New	254.42	10	\$48.17	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	New	12.97	10	\$48.17	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	8.51	10	\$48.17	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	New	105.40	3	\$465.77	3%	11%	\$144.80	0.03	0.03	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	New	211.30	3	\$465.77	3%	11%	\$144.80	0.02	0.02	IND_SEM-HVAC-AEG-1

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Wastewater	Ventilation	Strategic Energy Management	employee	New	7.66	3	\$465.77	3%	11%	\$144.80	0.01	0.01	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	23.75	3	\$465.77	3%	11%	\$144.80	0.04	0.04	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	6.09	3	\$465.77	3%	11%	\$144.80	0.01	0.01	IND_SEM-Lighting-AEG-1
Wastewater	Motors	Strategic Energy Management	employee	New	735.00	3	\$465.77	3%	11%	\$144.80	1.19	1.19	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	New	37.48	3	\$465.77	3%	11%	\$144.80	0.06	0.06	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	24.57	3	\$465.77	3%	11%	\$144.80	0.06	0.04	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	New	27.40	3	\$461.69	5%	39%	\$172.67	0.12	0.12	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	New	7.02	3	\$461.69	5%	39%	\$172.67	0.03	0.03	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	New	848.07	3	\$461.69	5%	39%	\$172.67	6.45	6.45	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	New	43.24	3	\$461.69	5%	39%	\$172.67	0.07	0.07	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	New	28.35	3	\$461.69	5%	39%	\$172.67	0.13	0.11	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	New	27.40	3	\$293.09	0%	0%	\$109.61	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	New	7.02	3	\$293.09	0%	0%	\$109.61	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	New	848.07	3	\$293.09	0%	0%	\$109.61	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	New	43.24	3	\$293.09	0%	0%	\$109.61	0.00	0.00	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	New	28.35	3	\$293.09	0%	0%	\$109.61	0.00	0.00	IND_RCX-Process-AEG-1

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Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	New	124.75	12	\$68.06	15%	35%	\$64.68	1.40	1.40	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	2,077.67	11	\$1,618.95	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	1.17	1.20	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.86	0.86	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.52	0.52	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.46	0.47	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.04	0.04	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.02	0.02	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.01	0.01	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.57	0.57	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.34	0.35	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.15	0.15	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.08	0.08	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.05	0.05	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.38	0.39	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	3.17	3.24	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	1.54	1.57	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.28	0.29	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	1.27	1.31	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	Existing	0.69	5	\$0.40	18%	30%	\$136.21	1.39	1.43	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.18	0.18	VENT_DCV-Ventilation-7PLN-v5-5

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Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	5.59	5.76	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	7.89	7.95	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.40	0.42	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	2.18	2.22	STAT_WIFI-All-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	1.59	1.59	STAT_WIFI-All-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.96	0.97	STAT_WIFI-All-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.52	15	\$0.36	7%	33%	\$78.80	11.00	11.71	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.72	15	\$0.60	7%	33%	\$92.88	15.40	16.40	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.06	0.06	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	2.14	2.19	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	2.19	2.25	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	2.58	2.72	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	3.76	3.96	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	2.57	2.71	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	205.81	20	\$73.65	15%	20%	\$31.73	0.38	0.38	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$77.42	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$54.19	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	6,208.03	10	\$947.40	9%	38%	\$20.47	385.50	385.50	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	Existing	4,656.02	12	\$1,443.84	9%	38%	\$36.76	281.58	281.58	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	4,656.02	10	\$1,504.91	9%	38%	\$43.36	281.58	281.58	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$11.39	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$18.85	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$95.04	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	158.40	10	\$12.38	17%	50%	\$10.48	11.48	11.48	CMPAIR_EQPT-Motors-7PLN-v5-2
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	0.84	0.84	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.06	0.06	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

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Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	181.03	10	\$20.38	9%	15%	\$15.11	2.30	2.30	E3T
Water	Motors	Compressed Air - System Controls	employee	Existing	36.21	10	\$8.85	9%	38%	\$32.79	2.19	2.19	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	90.51	10	\$8.90	18%	75%	\$13.18	11.24	11.24	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	67.89	15	\$54.36	26%	45%	\$82.70	2.74	2.74	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.26	10	\$0.83	17%	50%	\$49.48	0.16	0.16	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	13.58	10	\$2.72	17%	50%	\$26.85	0.98	0.98	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	2.78	2.78	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	13.58	15	\$7.47	17%	50%	\$56.86	0.98	0.98	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	Existing	126.72	6	\$20.41	26%	45%	\$31.88	5.11	5.11	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	252.19	10	\$92.37	25%	45%	\$49.13	10.70	10.70	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	73.92	10	\$32.49	10%	50%	\$58.96	25.10	25.10	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	41.07	10	\$11.53	6%	25%	\$37.67	6.62	6.62	MTR_GRWND>100HP-Motors-7PLN-v5-25
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	616.02	12	\$142.62	16%	25%	\$27.44	49.67	49.67	2015-mdu-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	164.27	10	\$42.90	16%	36%	\$35.04	28.56	28.56	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	Existing	4,520.30	10	\$585.13	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Water	Miscellaneous	Circulating Engine Block Heater	unit	Existing	6,614.01	15	\$1,581.52	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	36,722.79	10	\$604.92	0%	0%	\$2.21	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	2,138.12	1	\$54.66	0%	0%	\$25.86	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	828.87	2	\$14.74	0%	0%	\$9.30	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$246.36	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	12.65	15	\$1.71	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	661.54	15	\$88.94	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	Existing	2,562.77	10	\$26,674.26	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$3.14	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$14.59	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$17.61	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$55.31	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$11.28	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$54.42	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$1.09	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	Existing	377.07	10	\$92.31	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	390.53	10	\$6.91	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$50.21	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	Existing	313.72	10	\$168.52	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	251.28	10	\$55.51	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	Existing	251.28	10	\$22.76	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	Existing	673.33	10	\$68.89	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	Existing	2.81	5	\$0.39	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	6.01	1	\$0.26	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	Existing	66.17	10	\$93.31	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	Existing	140.03	10	\$93.31	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Ventilation	Transformer - High Efficiency	employee	Existing	5.31	10	\$93.31	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	18.75	10	\$93.31	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.37	10	\$93.31	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Motors	Transformer - High Efficiency	employee	Existing	492.82	10	\$93.31	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	Existing	25.13	10	\$93.31	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	16.77	10	\$93.31	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	Existing	191.17	3	\$902.20	3%	11%	\$145.76	1.13	1.16	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	Existing	404.52	3	\$902.20	3%	11%	\$145.76	0.85	0.85	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	Existing	15.34	3	\$902.20	3%	11%	\$145.76	0.51	0.52	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	Existing	54.18	3	\$902.20	3%	11%	\$145.76	1.58	1.68	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	12.62	3	\$902.20	3%	11%	\$145.76	0.40	0.41	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	Existing	1,423.69	3	\$902.20	3%	11%	\$145.76	48.65	48.65	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	Existing	72.59	3	\$902.20	3%	11%	\$145.76	2.48	2.48	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	Existing	48.44	3	\$902.20	3%	11%	\$145.76	2.85	2.22	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	Existing	62.51	3	\$894.30	0%	0%	\$171.84	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	Existing	14.56	3	\$894.30	0%	0%	\$171.84	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	Existing	1,642.72	3	\$894.30	0%	0%	\$171.84	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Process	Commissioning	employee	Existing	83.76	3	\$894.30	0%	0%	\$171.84	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	Existing	55.89	3	\$894.30	0%	0%	\$171.84	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	Existing	62.51	3	\$567.72	5%	39%	\$109.09	3.64	3.88	IND_RCX-Motors-AEG-1

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Water	Exterior Lighting	Retrocommissioning	employee	Existing	14.56	3	\$567.72	5%	39%	\$109.09	0.92	0.95	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	Existing	1,642.72	3	\$567.72	5%	39%	\$109.09	112.28	112.28	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	Existing	83.76	3	\$567.72	5%	39%	\$109.09	5.72	5.72	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	Existing	55.89	3	\$567.72	5%	39%	\$109.09	6.59	5.12	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	838.70	12	\$476.28	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	15%	20%	\$35.37	30.23	30.23	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	13,968.07	11	\$11,328.58	15%	20%	\$101.87	148.20	148.20	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Water	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.43	0.43	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.29	0.29	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.17	0.17	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.17	0.17	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.19	0.19	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.11	0.11	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.05	0.05	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.03	0.03	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.02	0.02	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.08	0.08	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.78	0.78	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.38	0.38	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.07	0.07	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.28	0.28	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	New	0.74	5	\$0.40	18%	30%	\$126.39	0.17	0.17	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.04	0.04	VENT_DCV-Ventilation-7PLN-v5-5
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	1.47	1.47	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	1.92	1.92	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.04	0.04	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.24	0.24	STAT_WIFI-AII-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.16	0.16	STAT_WIFI-AII-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.09	0.09	STAT_WIFI-AII-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.44	15	\$0.36	22%	41%	\$85.83	3.95	3.97	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.61	15	\$0.60	22%	41%	\$101.16	5.53	5.56	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.46	0.47	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.55	0.55	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.47	0.48	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.37	0.38	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.39	0.40	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	New	214.21	20	\$73.65	15%	20%	\$30.49	0.11	0.11	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$77.42	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$54.19	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	New	6,461.54	10	\$947.40	9%	38%	\$19.67	79.34	79.34	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	New	4,846.15	12	\$1,443.84	9%	38%	\$35.32	77.34	77.34	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	New	4,846.15	10	\$1,504.91	9%	38%	\$41.66	71.55	71.55	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$11.39	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$18.85	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$95.04	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	164.87	10	\$12.38	17%	50%	\$10.07	2.36	2.36	CMPAIR_EQPT-Motors-7PLN-v5-2

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Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.24	0.24	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.01	0.01	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	188.42	10	\$20.38	9%	15%	\$14.51	0.59	0.59	E3T
Water	Motors	Compressed Air - System Controls	employee	New	37.68	10	\$8.85	9%	38%	\$31.50	0.56	0.56	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	New	94.21	10	\$8.90	18%	75%	\$12.67	2.31	2.31	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	70.66	15	\$54.36	26%	45%	\$79.46	0.79	0.79	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.36	10	\$0.83	17%	50%	\$47.54	0.03	0.03	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	14.13	10	\$2.72	17%	50%	\$25.80	0.20	0.20	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	0.70	0.70	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	14.13	15	\$7.47	17%	50%	\$54.63	0.24	0.24	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	New	131.89	6	\$20.41	26%	45%	\$30.63	0.95	0.95	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	New	262.49	10	\$92.37	25%	45%	\$47.20	2.72	2.72	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	73.92	10	\$32.49	10%	50%	\$58.96	6.13	6.13	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	41.07	10	\$11.53	6%	25%	\$37.67	1.62	1.62	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	616.02	12	\$142.62	16%	25%	\$27.44	13.11	13.11	2015-mdu-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	164.27	10	\$42.90	16%	36%	\$35.04	5.65	5.65	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	New	4,704.88	10	\$585.13	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Circulating Engine Block Heater	unit	New	6,884.10	15	\$1,581.52	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	38,222.39	10	\$604.92	0%	0%	\$2.12	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,225.43	1	\$54.66	0%	0%	\$24.84	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	862.71	2	\$14.74	0%	0%	\$8.93	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$246.36	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	688.55	15	\$88.94	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	New	2,667.43	10	\$26,674.26	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$3.14	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$14.59	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$17.61	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$55.31	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$11.28	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$54.42	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$1.09	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	New	392.46	10	\$92.31	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	406.48	10	\$6.91	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$50.21	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	New	313.72	10	\$168.52	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	New	251.28	10	\$55.51	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	New	251.28	10	\$22.76	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	New	700.83	10	\$68.89	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	New	2.81	5	\$0.39	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	6.26	1	\$0.26	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	New	70.67	10	\$93.31	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	New	141.68	10	\$93.31	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Ventilation	Transformer - High Efficiency	employee	New	5.14	10	\$93.31	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	New	15.92	10	\$93.31	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	4.08	10	\$93.31	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Motors	Transformer - High Efficiency	employee	New	492.82	10	\$93.31	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	New	25.13	10	\$93.31	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	New	16.48	10	\$93.31	15%	15%	\$16.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	New	204.16	3	\$902.20	3%	11%	\$144.80	0.06	0.06	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	New	409.30	3	\$902.20	3%	11%	\$144.80	0.04	0.04	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	New	14.84	3	\$902.20	3%	11%	\$144.80	0.02	0.02	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	New	46.00	3	\$902.20	3%	11%	\$144.80	0.07	0.07	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	New	11.79	3	\$902.20	3%	11%	\$144.80	0.02	0.02	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	New	1,423.69	3	\$902.20	3%	11%	\$144.80	2.31	2.31	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	New	72.59	3	\$902.20	3%	11%	\$144.80	0.12	0.12	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	New	47.60	3	\$902.20	3%	11%	\$144.80	0.13	0.08	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	New	53.08	3	\$894.30	5%	39%	\$172.67	0.24	0.24	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	New	13.60	3	\$894.30	5%	39%	\$172.67	0.06	0.06	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	New	1,642.72	3	\$894.30	5%	39%	\$172.67	9.99	9.99	IND_SEM-HVAC-AEG-1

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Water	Process	Commissioning	employee	New	83.76	3	\$894.30	5%	39%	\$172.67	0.13	0.13	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	New	54.92	3	\$894.30	5%	39%	\$172.67	0.26	0.21	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	New	53.08	3	\$567.72	0%	0%	\$109.61	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Exterior Lighting	Retrocommissioning	employee	New	13.60	3	\$567.72	0%	0%	\$109.61	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	New	1,642.72	3	\$567.72	0%	0%	\$109.61	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	New	83.76	3	\$567.72	0%	0%	\$109.61	0.00	0.00	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	New	54.92	3	\$567.72	0%	0%	\$109.61	0.00	0.00	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	New	872.95	12	\$476.28	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	15%	20%	\$33.98	8.30	8.30	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	14,538.46	11	\$11,328.58	15%	20%	\$97.87	39.31	39.31	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Water	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	6.34	6.47	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	4.62	4.64	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	2.79	2.82	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	2.47	2.52	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.20	0.20	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.12	0.12	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.05	0.05	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	3.08	3.09	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	1.86	1.88	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.80	0.81	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.43	0.44	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.26	0.26	Building Energy Simulation Tool

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Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	2.05	2.10	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	17.09	17.48	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	8.30	8.49	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	1.53	1.57	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	6.84	7.06	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	3.43	5	\$0.40	18%	30%	\$27.56	7.49	7.73	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.96	0.98	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	30.19	31.11	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	42.61	42.91	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	2.16	2.24	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	11.75	12.00	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	8.56	8.60	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	5.17	5.23	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	2.55	15	\$0.36	7%	33%	\$15.95	40.58	43.21	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	3.58	15	\$0.60	7%	33%	\$18.79	56.82	60.49	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.20	0.23	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	7.89	8.09	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	8.07	8.28	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	9.50	10.01	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	13.86	14.60	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	9.47	9.98	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	615.89	20	\$220.39	15%	20%	\$31.73	1.73	1.73	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	225.80	15	\$235.47	20%	50%	\$107.71	27.98	27.98	RFG_FHPC-Refrigeration-RTF-v1.3-23
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	361.28	15	\$164.80	20%	50%	\$47.12	44.77	44.77	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	2,548.01	10	\$388.85	9%	38%	\$20.47	302.48	302.48	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	1,911.01	12	\$592.61	9%	38%	\$36.76	220.95	220.95	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,911.01	10	\$617.67	9%	38%	\$43.36	220.95	220.95	PUMP_VSD-Motors-UN-v1.0-3

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Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	640.38	10	\$67.01	9%	38%	\$14.04	76.02	76.02	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	756.81	10	\$110.88	9%	38%	\$19.65	87.50	87.50	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	1,164.32	10	\$558.95	9%	38%	\$64.40	134.62	134.62	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	4,724.79	10	\$369.18	17%	50%	\$10.48	654.38	654.38	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	47.98	47.98	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	3.25	3.25	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	5,399.76	10	\$608.04	9%	15%	\$15.11	131.43	131.43	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	1,079.95	10	\$263.96	9%	38%	\$32.79	124.86	124.86	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	2,699.88	10	\$265.34	18%	75%	\$13.18	641.03	641.03	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	2,024.91	15	\$1,621.32	26%	45%	\$82.70	156.08	156.08	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	67.50	10	\$24.90	17%	50%	\$49.48	9.35	9.35	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	404.98	10	\$81.07	17%	50%	\$26.85	56.09	56.09	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	158.76	158.76	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	404.98	15	\$222.93	17%	50%	\$56.86	56.09	56.09	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	3,779.83	6	\$608.78	26%	45%	\$31.88	291.35	291.35	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,291.07	10	\$839.13	25%	45%	\$49.13	185.89	185.89	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	82.62	10	\$36.31	10%	50%	\$58.96	67.03	67.03	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	45.90	10	\$12.89	6%	25%	\$37.67	17.69	17.69	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	688.48	12	\$159.39	16%	25%	\$27.44	132.67	132.67	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	183.59	10	\$47.95	16%	36%	\$35.04	76.28	76.28	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	13,527.10	10	\$1,751.02	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	19,792.60	15	\$4,732.74	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	18,840.54	10	\$604.92	0%	0%	\$4.31	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	6,398.39	1	\$54.66	0%	0%	\$8.64	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,480.40	2	\$14.74	0%	0%	\$3.11	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	1,505.35	15	\$749.29	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	9.96	15	\$1.34	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	89.27	15	\$12.00	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	1,051.86	10	\$10,948.13	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	6,162.85	15	\$48.81	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	446.27	15	\$44.37	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	270.96	15	\$53.56	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	270.96	15	\$168.23	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	770.36	15	\$175.60	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	1,540.71	15	\$847.05	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	1,540.71	15	\$16.99	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	3,425.47	10	\$838.63	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,547.81	10	\$62.81	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,414.28	10	\$272.14	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	1,039.45	10	\$558.38	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	832.57	10	\$183.93	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	832.57	10	\$75.41	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	6,116.92	10	\$625.81	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	9.32	5	\$1.29	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	54.60	1	\$2.39	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	186.85	10	\$216.70	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	395.38	10	\$216.70	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	15.00	10	\$216.70	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	36.14	10	\$216.70	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	8.42	10	\$216.70	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	688.48	10	\$216.70	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	416.28	10	\$216.70	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	40.14	10	\$216.70	15%	15%	\$16.23	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	539.77	3	\$2,095.12	3%	11%	\$145.75	0.72	0.73	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	1,142.20	3	\$2,095.12	3%	11%	\$145.75	0.54	0.54	IND_SEM-HVAC-AEG-1
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	43.32	3	\$2,095.12	3%	11%	\$145.75	0.32	0.33	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	104.42	3	\$2,095.12	3%	11%	\$145.75	0.68	0.73	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	24.33	3	\$2,095.12	3%	11%	\$145.75	0.17	0.18	IND_SEM-Lighting-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	1,988.94	3	\$2,095.12	3%	11%	\$145.75	15.29	15.29	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	1,202.60	3	\$2,095.12	3%	11%	\$145.75	9.24	9.24	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	115.96	3	\$2,095.12	3%	11%	\$145.75	1.54	1.19	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	120.48	3	\$1,899.37	0%	0%	\$170.88	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	28.07	3	\$1,899.37	0%	0%	\$170.88	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	Existing	2,294.93	3	\$1,899.37	0%	0%	\$170.88	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	Existing	1,387.62	3	\$1,899.37	0%	0%	\$170.88	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	133.79	3	\$1,899.37	0%	0%	\$170.88	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	120.48	3	\$1,205.76	5%	39%	\$108.48	13.40	14.31	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	28.07	3	\$1,205.76	5%	39%	\$108.48	3.39	3.51	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	2,294.93	3	\$1,205.76	5%	39%	\$108.48	299.87	299.87	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	Existing	1,387.62	3	\$1,205.76	5%	39%	\$108.48	181.31	181.31	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	133.79	3	\$1,205.76	5%	39%	\$108.48	30.15	23.43	IND_RCX-Process-AEG-1
Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	344.23	12	\$195.48	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	5,733.03	11	\$4,649.68	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	1,218.84	20	\$475.73	0%	67%	\$21.57	1,123.02	1,123.02	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	736.96	20	\$475.73	0%	67%	\$21.57	679.03	679.03	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	2.33	2.33	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	1.58	1.58	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.92	0.92	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.91	0.91	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.07	0.07	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.04	0.04	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.02	0.02	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	1.05	1.05	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.62	0.62	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.28	0.28	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.14	0.14	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.08	0.08	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.42	0.42	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	4.22	4.22	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	2.05	2.05	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.40	0.40	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	1.49	1.49	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	3.65	5	\$0.40	18%	30%	\$25.58	0.93	0.94	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.24	0.24	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	7.92	7.94	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	10.38	10.38	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.20	0.20	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	1.28	1.29	STAT_WIFI-All-7PLN-v2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.87	0.87	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.51	0.51	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	2.16	15	\$0.36	22%	41%	\$17.37	14.53	14.60	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	3.02	15	\$0.60	22%	41%	\$20.47	20.34	20.44	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.04	0.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	1.71	1.73	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	2.02	2.04	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	1.73	1.76	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	1.36	1.39	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	1.43	1.46	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	641.04	20	\$220.39	15%	20%	\$30.49	0.50	0.50	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	235.02	15	\$235.47	20%	50%	\$103.48	6.90	6.90	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	376.04	15	\$164.80	20%	50%	\$45.27	11.04	11.04	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	2,652.06	10	\$388.85	9%	38%	\$19.67	62.25	62.25	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	1,989.05	12	\$592.61	9%	38%	\$35.32	60.69	60.69	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	1,989.05	10	\$617.67	9%	38%	\$41.66	56.14	56.14	PUMP_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	666.53	10	\$67.01	9%	38%	\$13.49	15.65	15.65	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	787.71	10	\$110.88	9%	38%	\$18.88	22.23	22.23	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	1,211.87	10	\$558.95	9%	38%	\$61.87	34.21	34.21	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	4,917.73	10	\$369.18	17%	50%	\$10.07	134.67	134.67	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	13.89	13.89	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.67	0.67	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	5,620.26	10	\$608.04	9%	15%	\$14.51	33.40	33.40	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	1,124.05	10	\$263.96	9%	38%	\$31.50	31.73	31.73	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	2,810.13	10	\$265.34	18%	75%	\$12.67	131.92	131.92	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	2,107.60	15	\$1,621.32	26%	45%	\$79.46	45.19	45.19	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	70.25	10	\$24.90	17%	50%	\$47.54	1.92	1.92	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	421.52	10	\$81.07	17%	50%	\$25.80	11.54	11.54	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	39.84	39.84	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	421.52	15	\$222.93	17%	50%	\$54.63	13.83	13.83	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	New	3,934.18	6	\$608.78	26%	45%	\$30.63	53.99	53.99	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	2,384.63	10	\$839.13	25%	45%	\$47.20	47.23	47.23	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	82.62	10	\$36.31	10%	50%	\$58.96	16.36	16.36	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	45.90	10	\$12.89	6%	25%	\$37.67	4.32	4.32	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	688.48	12	\$159.39	16%	25%	\$27.44	35.01	35.01	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	183.59	10	\$47.95	16%	36%	\$35.04	15.08	15.08	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	14,079.49	10	\$1,751.02	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	20,600.84	15	\$4,732.74	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	19,609.90	10	\$604.92	0%	0%	\$4.14	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	6,659.67	1	\$54.66	0%	0%	\$8.30	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	2,581.69	2	\$14.74	0%	0%	\$2.98	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	1,566.82	15	\$749.29	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	10.36	15	\$1.34	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	92.92	15	\$12.00	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	New	1,094.81	10	\$10,948.13	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	6,414.51	15	\$48.81	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	464.50	15	\$44.37	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	282.03	15	\$53.56	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	282.03	15	\$168.23	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	801.81	15	\$175.60	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	1,603.63	15	\$847.05	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	1,603.63	15	\$16.99	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	3,565.35	10	\$838.63	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,692.69	10	\$62.81	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	2,512.87	10	\$272.14	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	1,039.45	10	\$558.38	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	832.57	10	\$183.93	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	832.57	10	\$75.41	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	6,366.70	10	\$625.81	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	9.32	5	\$1.29	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	56.83	1	\$2.39	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	199.55	10	\$216.70	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	400.05	10	\$216.70	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	14.50	10	\$216.70	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	30.69	10	\$216.70	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	7.87	10	\$216.70	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	688.48	10	\$216.70	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	416.28	10	\$216.70	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	39.45	10	\$216.70	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	576.47	3	\$2,095.12	3%	11%	\$144.43	0.04	0.04	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	New	1,155.69	3	\$2,095.12	3%	11%	\$144.43	0.03	0.03	IND_SEM-HVAC-AEG-1

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Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	41.90	3	\$2,095.12	3%	11%	\$144.43	0.02	0.02	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	88.67	3	\$2,095.12	3%	11%	\$144.43	0.03	0.03	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	22.72	3	\$2,095.12	3%	11%	\$144.43	0.01	0.01	IND_SEM-Lighting-AEG-1
Chemical Mfg	Motors	Strategic Energy Management	employee	New	1,988.94	3	\$2,095.12	3%	11%	\$144.43	0.73	0.73	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	New	1,202.60	3	\$2,095.12	3%	11%	\$144.43	0.44	0.44	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	113.95	3	\$2,095.12	3%	11%	\$144.43	0.07	0.05	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	New	102.31	3	\$1,899.37	5%	39%	\$171.70	0.87	0.88	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	26.22	3	\$1,899.37	5%	39%	\$171.70	0.22	0.23	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	New	2,294.93	3	\$1,899.37	5%	39%	\$171.70	33.40	33.40	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	New	1,387.62	3	\$1,899.37	5%	39%	\$171.70	20.20	20.20	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	New	131.49	3	\$1,899.37	5%	39%	\$171.70	1.17	0.95	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	102.31	3	\$1,205.76	0%	0%	\$109.00	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	26.22	3	\$1,205.76	0%	0%	\$109.00	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	New	2,294.93	3	\$1,205.76	0%	0%	\$109.00	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	New	1,387.62	3	\$1,205.76	0%	0%	\$109.00	0.00	0.00	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	131.49	3	\$1,205.76	0%	0%	\$109.00	0.00	0.00	IND_RCX-Process-AEG-1

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Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	358.29	12	\$195.48	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	5,967.14	11	\$4,649.68	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	1,218.84	20	\$475.73	0%	67%	\$21.57	382.15	382.15	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	New	736.96	20	\$475.73	0%	67%	\$21.57	231.06	231.06	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	0.45	0.46	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.33	0.33	Building Energy Simulation Tool

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Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.20	0.20	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.18	0.18	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.22	0.22	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.13	0.13	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.06	0.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.03	0.03	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.15	0.15	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	1.22	1.25	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	0.59	0.61	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.11	0.11	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	0.49	0.51	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.06	5	\$0.40	18%	30%	\$1,572.05	0.54	0.55	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.07	0.07	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	2.16	2.23	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	3.05	3.07	HVLS-Heating-AEG-1
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.15	0.16	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	0.84	0.86	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	0.61	0.62	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.37	0.37	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.04	15	\$0.36	7%	33%	\$909.54	1.88	2.00	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.06	15	\$0.60	7%	33%	\$1,071.95	2.63	2.80	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	0.37	0.37	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	0.37	0.38	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	0.44	0.46	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	0.64	0.68	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	0.44	0.46	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	29.26	20	\$10.47	15%	20%	\$31.73	0.08	0.08	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	4.98	15	\$5.19	20%	50%	\$107.71	0.58	0.58	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	7.97	15	\$3.63	20%	50%	\$47.12	0.93	0.93	AEG Research - prior study

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	3.79	10	\$0.58	9%	38%	\$20.47	0.42	0.42	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	2.84	12	\$0.88	9%	38%	\$36.76	0.31	0.31	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	2.84	10	\$0.92	9%	38%	\$43.36	0.31	0.31	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	3.33	10	\$0.35	9%	38%	\$14.04	0.37	0.37	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	3.94	10	\$0.58	9%	38%	\$19.65	0.43	0.43	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	6.06	10	\$2.91	9%	38%	\$64.40	0.66	0.66	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	19.18	10	\$1.50	17%	50%	\$10.48	2.50	2.50	CMPAIR_EQPT-Motors-7PLN-v5-2
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	0.18	0.18	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	21.92	10	\$2.47	9%	15%	\$15.11	0.50	0.50	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	4.38	10	\$1.07	9%	38%	\$32.79	0.48	0.48	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	10.96	10	\$1.08	18%	75%	\$13.18	2.45	2.45	CMPAIR_LEAK-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	8.22	15	\$6.58	26%	45%	\$82.70	0.60	0.60	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.27	10	\$0.10	17%	50%	\$49.48	0.04	0.04	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1.64	10	\$0.33	17%	50%	\$26.85	0.21	0.21	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	0.61	0.61	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1.64	15	\$0.90	17%	50%	\$56.86	0.21	0.21	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	15.34	6	\$2.47	26%	45%	\$31.88	1.11	1.11	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	32.08	10	\$11.75	25%	45%	\$49.13	2.45	2.45	MATHAND_VSD-Material Handling-7PLN-v5-2
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.62	10	\$0.27	10%	50%	\$58.96	0.38	0.38	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.34	10	\$0.10	6%	25%	\$37.67	0.10	0.10	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	5.16	12	\$1.20	16%	25%	\$27.44	0.75	0.75	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	1.38	10	\$0.36	16%	36%	\$35.04	0.43	0.43	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	642.66	10	\$83.19	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	940.32	15	\$224.85	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	27.99	10	\$604.92	0%	0%	\$2,898.78	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	303.98	1	\$54.66	0%	0%	\$181.87	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	117.84	2	\$14.74	0%	0%	\$65.39	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	33.19	15	\$16.52	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	21.46	15	\$2.90	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	6.02	15	\$0.81	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	1.56	10	\$16.27	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	9.98	15	\$0.08	15%	75%	\$0.82	2.29	2.29	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	9.84	15	\$0.98	15%	75%	\$10.27	2.26	2.26	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	5.97	15	\$1.18	15%	75%	\$20.42	1.37	1.37	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	5.97	15	\$3.71	15%	75%	\$64.12	1.41	1.41	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1

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Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.25	15	\$0.28	15%	75%	\$23.54	0.29	0.29	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	2.49	15	\$1.37	15%	75%	\$56.78	0.59	0.59	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	2.49	15	\$0.03	15%	75%	\$1.14	0.59	0.59	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	47.97	10	\$11.74	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	49.68	10	\$0.88	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	64.32	10	\$7.25	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	15.96	10	\$8.57	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	12.78	10	\$2.82	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	12.78	10	\$1.16	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	85.65	10	\$8.76	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.14	5	\$0.02	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.76	1	\$0.03	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1

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Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	14.19	10	\$7.28	15%	15%	\$16.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	30.02	10	\$7.28	15%	15%	\$16.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.14	10	\$7.28	15%	15%	\$16.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	1.78	10	\$7.28	15%	15%	\$16.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.41	10	\$7.28	15%	15%	\$16.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	4.13	10	\$7.28	15%	15%	\$16.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	6.39	10	\$7.28	15%	15%	\$16.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.91	10	\$7.28	15%	15%	\$16.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	40.99	3	\$70.39	3%	11%	\$146.21	0.44	0.45	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	86.73	3	\$70.39	3%	11%	\$146.21	0.33	0.33	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	3.29	3	\$70.39	3%	11%	\$146.21	0.20	0.20	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	5.14	3	\$70.39	3%	11%	\$146.21	0.27	0.29	IND_SEM-Lighting-AEG-1

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Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	1.20	3	\$70.39	3%	11%	\$146.21	0.07	0.07	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	11.93	3	\$70.39	3%	11%	\$146.21	0.73	0.73	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	18.47	3	\$70.39	3%	11%	\$146.21	1.14	1.14	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	5.51	3	\$70.39	3%	11%	\$146.21	0.58	0.45	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	5.93	3	\$21.12	0%	0%	\$150.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	1.38	3	\$21.12	0%	0%	\$150.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	13.77	3	\$21.12	0%	0%	\$150.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	21.31	3	\$21.12	0%	0%	\$150.78	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	6.36	3	\$21.12	0%	0%	\$150.78	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	5.93	3	\$13.41	5%	39%	\$95.72	0.62	0.66	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	1.38	3	\$13.41	5%	39%	\$95.72	0.16	0.16	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	13.77	3	\$13.41	5%	39%	\$95.72	1.69	1.69	IND_RCX-Motors-AEG-1

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Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	21.31	3	\$13.41	5%	39%	\$95.72	2.62	2.62	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	6.36	3	\$13.41	5%	39%	\$95.72	1.35	1.05	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	0.51	12	\$0.29	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	8.52	11	\$6.91	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.17	0.17	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.11	0.11	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.07	0.07	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.06	0.07	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.08	0.08	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.04	0.04	Building Energy Simulation Tool

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Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.03	0.03	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.30	0.30	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.15	0.15	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.03	0.03	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.11	0.11	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.06	5	\$0.40	18%	30%	\$1,458.74	0.07	0.07	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.02	0.02	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	0.57	0.57	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	0.74	0.74	HVLS-Heating-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.09	0.09	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.06	0.06	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.04	0.04	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.04	15	\$0.36	22%	41%	\$990.66	0.67	0.68	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.05	15	\$0.60	22%	41%	\$1,167.57	0.94	0.95	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.08	0.08	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.09	0.09	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.08	0.08	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.06	0.06	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.07	0.07	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	30.45	20	\$10.47	15%	20%	\$30.49	0.02	0.02	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	5.18	15	\$5.19	20%	50%	\$103.48	0.14	0.14	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	8.29	15	\$3.63	20%	50%	\$45.27	0.23	0.23	AEG Research - prior study
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	3.94	10	\$0.58	9%	38%	\$19.67	0.09	0.09	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	2.96	12	\$0.88	9%	38%	\$35.32	0.08	0.08	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	2.96	10	\$0.92	9%	38%	\$41.66	0.08	0.08	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	3.47	10	\$0.35	9%	38%	\$13.49	0.08	0.08	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	4.10	10	\$0.58	9%	38%	\$18.88	0.11	0.11	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	6.30	10	\$2.91	9%	38%	\$61.87	0.17	0.17	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	19.96	10	\$1.50	17%	50%	\$10.07	0.52	0.52	CMPAIR_EQPT-Motors-7PLN-v5-2

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Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.05	0.05	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	22.81	10	\$2.47	9%	15%	\$14.51	0.13	0.13	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	4.56	10	\$1.07	9%	38%	\$31.50	0.12	0.12	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	11.41	10	\$1.08	18%	75%	\$12.67	0.50	0.50	CMPAIR_LEAK-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	8.55	15	\$6.58	26%	45%	\$79.46	0.17	0.17	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.29	10	\$0.10	17%	50%	\$47.54	0.01	0.01	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1.71	10	\$0.33	17%	50%	\$25.80	0.04	0.04	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	0.15	0.15	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1.71	15	\$0.90	17%	50%	\$54.63	0.05	0.05	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	15.97	6	\$2.47	26%	45%	\$30.63	0.21	0.21	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	33.39	10	\$11.75	25%	45%	\$47.20	0.62	0.62	MATHAND_VSD-Material Handling-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.62	10	\$0.27	10%	50%	\$58.96	0.09	0.09	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.34	10	\$0.10	6%	25%	\$37.67	0.02	0.02	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	5.16	12	\$1.20	16%	25%	\$27.44	0.20	0.20	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	1.38	10	\$0.36	16%	36%	\$35.04	0.09	0.09	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	668.90	10	\$83.19	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	978.72	15	\$224.85	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	29.14	10	\$604.92	0%	0%	\$2,785.05	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	316.39	1	\$54.66	0%	0%	\$174.73	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	122.65	2	\$14.74	0%	0%	\$62.82	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	34.54	15	\$16.52	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	22.33	15	\$2.90	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	6.26	15	\$0.81	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	1.63	10	\$16.27	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	10.38	15	\$0.08	15%	75%	\$0.79	0.66	0.66	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	10.24	15	\$0.98	15%	75%	\$9.87	0.65	0.65	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	6.22	15	\$1.18	15%	75%	\$19.61	0.40	0.40	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	6.22	15	\$3.71	15%	75%	\$61.61	0.35	0.35	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.30	15	\$0.28	15%	75%	\$22.62	0.07	0.07	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	2.60	15	\$1.37	15%	75%	\$54.56	0.14	0.14	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	2.60	15	\$0.03	15%	75%	\$1.09	0.14	0.14	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	49.92	10	\$11.74	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	51.71	10	\$0.88	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	66.95	10	\$7.25	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	15.96	10	\$8.57	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1

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Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	12.78	10	\$2.82	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	12.78	10	\$1.16	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	89.15	10	\$8.76	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.14	5	\$0.02	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.80	1	\$0.03	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	15.15	10	\$7.28	15%	15%	\$15.91	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	30.38	10	\$7.28	15%	15%	\$15.91	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.10	10	\$7.28	15%	15%	\$15.91	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	1.51	10	\$7.28	15%	15%	\$15.91	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.39	10	\$7.28	15%	15%	\$15.91	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	4.13	10	\$7.28	15%	15%	\$15.91	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	6.39	10	\$7.28	15%	15%	\$15.91	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	1.87	10	\$7.28	15%	15%	\$15.91	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	43.77	3	\$70.39	3%	11%	\$142.87	0.02	0.02	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	87.76	3	\$70.39	3%	11%	\$142.87	0.02	0.02	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	3.18	3	\$70.39	3%	11%	\$142.87	0.01	0.01	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	4.36	3	\$70.39	3%	11%	\$142.87	0.01	0.01	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	1.12	3	\$70.39	3%	11%	\$142.87	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	11.93	3	\$70.39	3%	11%	\$142.87	0.03	0.03	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	18.47	3	\$70.39	3%	11%	\$142.87	0.05	0.05	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	5.41	3	\$70.39	3%	11%	\$142.87	0.03	0.02	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	5.03	3	\$21.12	5%	39%	\$153.60	0.04	0.04	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	1.29	3	\$21.12	5%	39%	\$153.60	0.01	0.01	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	New	13.77	3	\$21.12	5%	39%	\$153.60	0.15	0.15	IND_SEM-HVAC-AEG-1

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Electronic Equipment Mfg	Process	Commissioning	employee	New	21.31	3	\$21.12	5%	39%	\$153.60	0.29	0.29	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	6.25	3	\$21.12	5%	39%	\$153.60	0.05	0.04	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	5.03	3	\$13.41	0%	0%	\$97.51	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	1.29	3	\$13.41	0%	0%	\$97.51	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	13.77	3	\$13.41	0%	0%	\$97.51	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	21.31	3	\$13.41	0%	0%	\$97.51	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	6.25	3	\$13.41	0%	0%	\$97.51	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	0.53	12	\$0.29	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	8.87	11	\$6.91	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	2.41	2.46	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	1.76	1.77	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	1.06	1.07	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.94	0.96	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.07	0.07	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.04	0.05	Building Energy Simulation Tool

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Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	1.17	1.18	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.71	0.72	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.30	0.31	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.17	0.17	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.10	0.10	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.78	0.80	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	6.50	6.65	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	3.16	3.23	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.58	0.60	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	2.60	2.69	AEG-BEST
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	1.30	5	\$0.40	18%	30%	\$72.61	2.85	2.94	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.37	0.37	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	11.49	11.84	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	16.22	16.33	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.82	0.85	RTU_MNT-Cooling-PGE-R2-1

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Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	4.47	4.57	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	3.26	3.27	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	1.97	1.99	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.97	15	\$0.36	7%	33%	\$42.01	14.79	15.75	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.36	15	\$0.60	7%	33%	\$49.51	20.70	22.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.08	0.08	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	2.90	2.98	CLTG_DLMpA-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	2.97	3.05	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	3.50	3.68	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	5.10	5.37	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	3.49	3.67	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,582.54	20	\$924.15	15%	20%	\$31.73	0.42	0.42	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	69.67	15	\$72.65	20%	50%	\$107.71	1.00	1.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	111.47	15	\$50.85	20%	50%	\$47.12	1.59	1.59	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	715.44	10	\$109.18	9%	38%	\$20.47	9.80	9.80	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	536.58	12	\$166.39	9%	38%	\$36.76	7.16	7.16	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	536.58	10	\$173.43	9%	38%	\$43.36	7.16	7.16	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	915.77	10	\$95.83	9%	38%	\$14.04	12.54	12.54	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	1,082.27	10	\$158.56	9%	38%	\$19.65	14.44	14.44	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	1,665.03	10	\$799.33	9%	38%	\$64.40	22.21	22.21	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	2,481.29	10	\$193.88	17%	50%	\$10.48	39.65	39.65	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	2.91	2.91	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.20	0.20	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	2,835.76	10	\$319.32	9%	15%	\$15.11	7.96	7.96	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	567.15	10	\$138.62	9%	38%	\$32.79	7.57	7.57	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	1,417.88	10	\$139.35	18%	75%	\$13.18	38.84	38.84	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	1,063.41	15	\$851.46	26%	45%	\$82.70	9.46	9.46	CMPAIR_VSD-Motors-UN-v1.0-3

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Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	35.45	10	\$13.08	17%	50%	\$49.48	0.57	0.57	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	212.68	10	\$42.57	17%	50%	\$26.85	3.40	3.40	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	9.62	9.62	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	212.68	15	\$117.08	17%	50%	\$56.86	3.40	3.40	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	Existing	1,985.03	6	\$319.71	26%	45%	\$31.88	17.65	17.65	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,149.46	10	\$787.26	25%	45%	\$49.13	20.12	20.12	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	68.56	10	\$30.13	10%	50%	\$58.96	5.13	5.13	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	38.09	10	\$10.69	6%	25%	\$37.67	1.35	1.35	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	571.30	12	\$132.26	16%	25%	\$27.44	10.16	10.16	2015-mdu-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	152.35	10	\$39.79	16%	36%	\$35.04	5.84	5.84	DRV_SYNBELT-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	Existing	56,721.83	10	\$7,342.39	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	Existing	82,994.30	15	\$19,845.34	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	10,580.27	10	\$604.92	0%	0%	\$7.67	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	26,829.72	1	\$54.66	0%	0%	\$2.06	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	10,400.82	2	\$14.74	0%	0%	\$0.74	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	464.47	15	\$231.19	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	67.66	15	\$9.13	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	81.24	15	\$10.92	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	Existing	295.35	10	\$3,074.07	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	251.70	15	\$1.99	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	137.69	15	\$13.69	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	83.60	15	\$16.52	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	83.60	15	\$51.90	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	31.46	15	\$7.17	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	62.93	15	\$34.60	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	62.93	15	\$0.69	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	3,213.74	10	\$786.79	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,328.52	10	\$58.92	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1

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Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	2,133.85	10	\$240.53	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	350.00	10	\$188.01	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	280.34	10	\$61.93	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	280.34	10	\$25.39	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	5,738.83	10	\$587.13	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	3.14	5	\$0.43	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	51.23	1	\$2.24	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	616.34	10	\$339.32	15%	15%	\$16.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	1,304.23	10	\$339.32	15%	15%	\$16.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	49.47	10	\$339.32	15%	15%	\$16.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	115.26	10	\$339.32	15%	15%	\$16.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	26.85	10	\$339.32	15%	15%	\$16.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	457.04	10	\$339.32	15%	15%	\$16.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	140.17	10	\$339.32	15%	15%	\$16.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	84.15	10	\$339.32	15%	15%	\$16.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	1,780.54	3	\$3,280.69	3%	11%	\$146.48	0.27	0.28	IND_SEM-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	3,767.76	3	\$3,280.69	3%	11%	\$146.48	0.21	0.21	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	142.90	3	\$3,280.69	3%	11%	\$146.48	0.12	0.12	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	332.98	3	\$3,280.69	3%	11%	\$146.48	0.25	0.27	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	77.57	3	\$3,280.69	3%	11%	\$146.48	0.06	0.07	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	1,320.34	3	\$3,280.69	3%	11%	\$146.48	1.17	1.17	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	404.93	3	\$3,280.69	3%	11%	\$146.48	0.36	0.36	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	243.11	3	\$3,280.69	3%	11%	\$146.48	0.37	0.29	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	384.21	3	\$1,228.98	0%	0%	\$157.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	89.51	3	\$1,228.98	0%	0%	\$157.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	Existing	1,523.47	3	\$1,228.98	0%	0%	\$157.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	Existing	467.23	3	\$1,228.98	0%	0%	\$157.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	280.51	3	\$1,228.98	0%	0%	\$157.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	384.21	3	\$780.18	5%	39%	\$100.08	4.93	5.27	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	89.51	3	\$780.18	5%	39%	\$100.08	1.25	1.29	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	1,523.47	3	\$780.18	5%	39%	\$100.08	22.97	22.97	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	Existing	467.23	3	\$780.18	5%	39%	\$100.08	7.04	7.04	IND_RCX-Process-AEG-1

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Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	280.51	3	\$780.18	5%	39%	\$100.08	7.29	5.67	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	96.66	12	\$54.89	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,609.75	11	\$1,305.56	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.89	0.89	Building Energy Simulation Tool

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Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.60	0.60	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.35	0.35	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.35	0.35	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.03	0.03	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.40	0.40	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.23	0.23	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.11	0.11	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.05	0.05	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.03	0.03	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.16	0.16	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	1.61	1.61	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.78	0.78	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.15	0.15	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.57	0.57	AEG-BEST

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Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	1.38	5	\$0.40	18%	30%	\$67.37	0.35	0.36	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.09	0.09	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	3.01	3.02	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	3.95	3.95	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.07	0.08	RTU_MNT-Cooling-PGE-R2-1
Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.49	0.49	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.33	0.33	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.19	0.19	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.82	15	\$0.36	22%	41%	\$45.75	5.42	5.45	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.15	15	\$0.60	22%	41%	\$53.93	7.59	7.62	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.63	0.64	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.74	0.75	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.64	0.65	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.50	0.51	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.53	0.54	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,688.00	20	\$924.15	15%	20%	\$30.49	0.12	0.12	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	72.51	15	\$72.65	20%	50%	\$103.48	0.25	0.25	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	116.02	15	\$50.85	20%	50%	\$45.27	0.39	0.39	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	744.66	10	\$109.18	9%	38%	\$19.67	2.02	2.02	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	558.49	12	\$166.39	9%	38%	\$35.32	1.97	1.97	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	558.49	10	\$173.43	9%	38%	\$41.66	1.82	1.82	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	953.16	10	\$95.83	9%	38%	\$13.49	2.58	2.58	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	1,126.47	10	\$158.56	9%	38%	\$18.88	3.67	3.67	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	1,733.02	10	\$799.33	9%	38%	\$61.87	5.64	5.64	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	2,582.61	10	\$193.88	17%	50%	\$10.07	8.16	8.16	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.84	0.84	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1

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Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.04	0.04	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	2,951.56	10	\$319.32	9%	15%	\$14.51	2.02	2.02	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	590.31	10	\$138.62	9%	38%	\$31.50	1.92	1.92	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	1,475.78	10	\$139.35	18%	75%	\$12.67	7.99	7.99	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	1,106.83	15	\$851.46	26%	45%	\$79.46	2.74	2.74	CMPAIR_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	36.89	10	\$13.08	17%	50%	\$47.54	0.12	0.12	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	221.37	10	\$42.57	17%	50%	\$25.80	0.70	0.70	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	2.41	2.41	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	221.37	15	\$117.08	17%	50%	\$54.63	0.84	0.84	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	New	2,066.09	6	\$319.71	26%	45%	\$30.63	3.27	3.27	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	2,237.23	10	\$787.26	25%	45%	\$47.20	5.11	5.11	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	68.56	10	\$30.13	10%	50%	\$58.96	1.25	1.25	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	38.09	10	\$10.69	6%	25%	\$37.67	0.33	0.33	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	571.30	12	\$132.26	16%	25%	\$27.44	2.68	2.68	2015-mdu-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	152.35	10	\$39.79	16%	36%	\$35.04	1.16	1.16	DRV_SYNBELT-Motors-7PLN-v5-1

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Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	New	59,038.10	10	\$7,342.39	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	New	86,383.42	15	\$19,845.34	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	11,012.33	10	\$604.92	0%	0%	\$7.37	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	27,925.32	1	\$54.66	0%	0%	\$1.98	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	10,825.55	2	\$14.74	0%	0%	\$0.71	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	483.43	15	\$231.19	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	70.42	15	\$9.13	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	84.56	15	\$10.92	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	New	307.41	10	\$3,074.07	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	261.98	15	\$1.99	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	143.32	15	\$13.69	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	87.02	15	\$16.52	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	87.02	15	\$51.90	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	32.75	15	\$7.17	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	65.50	15	\$34.60	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	65.50	15	\$0.69	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	3,344.98	10	\$786.79	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,464.44	10	\$58.92	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	2,220.99	10	\$240.53	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	350.00	10	\$188.01	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	280.34	10	\$61.93	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	280.34	10	\$25.39	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	5,973.18	10	\$587.13	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	3.14	5	\$0.43	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	53.32	1	\$2.24	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	658.25	10	\$339.32	15%	15%	\$15.98	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	1,319.63	10	\$339.32	15%	15%	\$15.98	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	47.85	10	\$339.32	15%	15%	\$15.98	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	97.88	10	\$339.32	15%	15%	\$15.98	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	25.08	10	\$339.32	15%	15%	\$15.98	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	457.04	10	\$339.32	15%	15%	\$15.98	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	140.17	10	\$339.32	15%	15%	\$15.98	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	82.70	10	\$339.32	15%	15%	\$15.98	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	1,901.60	3	\$3,280.69	3%	11%	\$143.50	0.01	0.01	IND_SEM-HVAC-AEG-1
Industrial Machinery	Heating	Strategic Energy Management	employee	New	3,812.26	3	\$3,280.69	3%	11%	\$143.50	0.01	0.01	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	138.22	3	\$3,280.69	3%	11%	\$143.50	0.01	0.01	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	282.76	3	\$3,280.69	3%	11%	\$143.50	0.01	0.01	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	72.46	3	\$3,280.69	3%	11%	\$143.50	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	New	1,320.34	3	\$3,280.69	3%	11%	\$143.50	0.06	0.06	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	New	404.93	3	\$3,280.69	3%	11%	\$143.50	0.02	0.02	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	238.92	3	\$3,280.69	3%	11%	\$143.50	0.02	0.01	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	New	326.26	3	\$1,228.98	5%	39%	\$160.54	0.32	0.32	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	New	83.61	3	\$1,228.98	5%	39%	\$160.54	0.08	0.08	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	New	1,523.47	3	\$1,228.98	5%	39%	\$160.54	2.02	2.02	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	New	467.23	3	\$1,228.98	5%	39%	\$160.54	0.78	0.78	IND_SEM-Lighting-AEG-1

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Industrial Machinery	Miscellaneous	Commissioning	employee	New	275.67	3	\$1,228.98	5%	39%	\$160.54	0.28	0.23	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	326.26	3	\$780.18	0%	0%	\$101.91	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	83.61	3	\$780.18	0%	0%	\$101.91	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	New	1,523.47	3	\$780.18	0%	0%	\$101.91	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	New	467.23	3	\$780.18	0%	0%	\$101.91	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	275.67	3	\$780.18	0%	0%	\$101.91	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	New	100.60	12	\$54.89	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,675.48	11	\$1,305.56	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Industrial Machinery	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	0.63	0.65	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.46	0.46	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.28	0.28	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.25	0.25	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.31	0.31	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.19	0.19	Building Energy Simulation Tool

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Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.08	0.08	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.04	0.04	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.20	0.21	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	1.70	1.74	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	0.83	0.85	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.15	0.16	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	0.68	0.70	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.19	5	\$0.40	18%	30%	\$491.92	0.75	0.77	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.10	0.10	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	3.01	3.10	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	4.25	4.28	HVLS-Heating-AEG-1

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Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.22	0.22	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	1.17	1.20	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	0.85	0.86	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.52	0.52	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.14	15	\$0.36	7%	33%	\$284.61	9.30	9.90	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.20	15	\$0.60	7%	33%	\$335.43	13.02	13.87	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.05	0.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	1.81	1.86	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	1.85	1.90	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	2.18	2.30	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	3.18	3.35	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	2.17	2.29	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	247.60	20	\$88.60	15%	20%	\$31.73	0.34	0.34	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	10.06	15	\$10.49	20%	50%	\$107.71	0.60	0.60	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	16.10	15	\$7.34	20%	50%	\$47.12	0.96	0.96	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	433.84	10	\$66.21	9%	38%	\$20.47	24.76	24.76	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	325.38	12	\$100.90	9%	38%	\$36.76	18.09	18.09	PUMP_SYSOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	325.38	10	\$105.17	9%	38%	\$43.36	18.09	18.09	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	175.83	10	\$18.40	9%	38%	\$14.04	10.04	10.04	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	207.79	10	\$30.44	9%	38%	\$19.65	11.55	11.55	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	319.68	10	\$153.47	9%	38%	\$64.40	17.77	17.77	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	287.89	10	\$22.49	17%	50%	\$10.48	19.17	19.17	CMPAIR_EQPT-Motors-7PLN-v5-2

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	1.41	1.41	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.10	0.10	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	329.01	10	\$37.05	9%	15%	\$15.11	3.85	3.85	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	65.80	10	\$16.08	9%	38%	\$32.79	3.66	3.66	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	164.51	10	\$16.17	18%	75%	\$13.18	18.78	18.78	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	123.38	15	\$98.79	26%	45%	\$82.70	4.57	4.57	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	4.11	10	\$1.52	17%	50%	\$49.48	0.27	0.27	CMPAIR_LPDPFILT-Motors-ILTRM-v4.0-1
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	24.68	10	\$4.94	17%	50%	\$26.85	1.64	1.64	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	4.65	4.65	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	24.68	15	\$13.58	17%	50%	\$56.86	1.64	1.64	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	Existing	230.31	6	\$37.09	26%	45%	\$31.88	8.53	8.53	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,072.19	10	\$758.96	25%	45%	\$49.13	80.83	80.83	MATHAND_VSD-Material Handling-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	28.48	10	\$12.52	10%	50%	\$58.96	11.11	11.11	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	15.82	10	\$4.44	6%	25%	\$37.67	2.93	2.93	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	237.34	12	\$54.95	16%	25%	\$27.44	21.99	21.99	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	63.29	10	\$16.53	16%	36%	\$35.04	12.64	12.64	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	5,438.28	10	\$703.96	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	7,957.18	15	\$1,902.70	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	3,207.88	10	\$604.92	0%	0%	\$25.30	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	2,572.33	1	\$54.66	0%	0%	\$21.49	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	997.19	2	\$14.74	0%	0%	\$7.73	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	67.07	15	\$33.38	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	89.84	15	\$12.13	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	341.15	15	\$45.87	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	Existing	179.09	10	\$1,864.08	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	62.37	15	\$0.49	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	19.88	15	\$1.98	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	12.07	15	\$2.39	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	12.07	15	\$7.50	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	7.80	15	\$1.78	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	15.59	15	\$8.57	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	15.59	15	\$0.17	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	3,098.22	10	\$758.51	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,208.87	10	\$56.81	15%	75%	\$2.37	375.51	375.51	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	813.63	10	\$91.71	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	87.82	10	\$47.18	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1

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Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	70.34	10	\$15.54	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	70.34	10	\$6.37	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	5,532.54	10	\$566.02	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	0.79	5	\$0.11	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	49.39	1	\$2.16	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	38.75	10	\$52.56	15%	15%	\$16.15	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	82.00	10	\$52.56	15%	15%	\$16.15	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	3.11	10	\$52.56	15%	15%	\$16.15	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	17.26	10	\$52.56	15%	15%	\$16.15	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.02	10	\$52.56	15%	15%	\$16.15	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	237.34	10	\$52.56	15%	15%	\$16.15	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	35.17	10	\$52.56	15%	15%	\$16.15	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	16.14	10	\$52.56	15%	15%	\$16.15	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	111.95	3	\$508.20	3%	11%	\$145.06	0.75	0.77	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	236.90	3	\$508.20	3%	11%	\$145.06	0.57	0.57	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	8.98	3	\$508.20	3%	11%	\$145.06	0.34	0.34	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	49.86	3	\$508.20	3%	11%	\$145.06	1.65	1.76	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	11.61	3	\$508.20	3%	11%	\$145.06	0.42	0.43	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	685.66	3	\$508.20	3%	11%	\$145.06	26.60	26.60	IND_SEM-Motors-AEG-1
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	101.61	3	\$508.20	3%	11%	\$145.06	3.94	3.94	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	46.62	3	\$508.20	3%	11%	\$145.06	3.12	2.42	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	57.53	3	\$486.15	0%	0%	\$167.20	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	13.40	3	\$486.15	0%	0%	\$167.20	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	Existing	791.15	3	\$486.15	0%	0%	\$167.20	0.00	0.00	IND_SEM-HVAC-AEG-1

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Lumber Wood Products	Process	Commissioning	employee	Existing	117.24	3	\$486.15	0%	0%	\$167.20	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	53.79	3	\$486.15	0%	0%	\$167.20	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	57.53	3	\$308.62	10%	35%	\$106.14	2.26	2.42	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	13.40	3	\$308.62	10%	35%	\$106.14	0.57	0.59	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	791.15	3	\$308.62	10%	35%	\$106.14	36.54	36.54	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	Existing	117.24	3	\$308.62	10%	35%	\$106.14	5.42	5.42	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	53.79	3	\$308.62	10%	35%	\$106.14	4.28	3.33	IND_RCX-Process-AEG-1
Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	58.61	12	\$33.28	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	976.13	11	\$791.68	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

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Lumber Wood Products	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.23	0.23	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.16	0.16	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.09	0.09	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.09	0.09	Building Energy Simulation Tool

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Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.10	0.10	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.06	0.06	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.04	0.04	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.42	0.42	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.20	0.20	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.04	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86

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Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.15	0.15	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.20	5	\$0.40	18%	30%	\$456.46	0.09	0.09	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.02	0.02	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	0.79	0.79	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	1.04	1.04	HVLS-Heating-AEG-1
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.13	0.13	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.09	0.09	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.05	0.05	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.12	15	\$0.36	22%	41%	\$309.99	3.34	3.36	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.17	15	\$0.60	22%	41%	\$365.35	4.68	4.70	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.39	0.40	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.46	0.47	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.40	0.40	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.31	0.32	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.33	0.33	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	257.72	20	\$88.60	15%	20%	\$30.49	0.10	0.10	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	10.47	15	\$10.49	20%	50%	\$103.48	0.15	0.15	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	16.75	15	\$7.34	20%	50%	\$45.27	0.24	0.24	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	451.55	10	\$66.21	9%	38%	\$19.67	5.10	5.10	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	338.66	12	\$100.90	9%	38%	\$35.32	4.97	4.97	PUMP_SYSOPT-Motors-UN-v1.0-5

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Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	338.66	10	\$105.17	9%	38%	\$41.66	4.60	4.60	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	183.01	10	\$18.40	9%	38%	\$13.49	2.07	2.07	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	216.28	10	\$30.44	9%	38%	\$18.88	2.93	2.93	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	332.74	10	\$153.47	9%	38%	\$61.87	4.52	4.52	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	299.64	10	\$22.49	17%	50%	\$10.07	3.95	3.95	CMPAIR_EQPT-Motors-7PLN-v5-2
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.41	0.41	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.02	0.02	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	342.45	10	\$37.05	9%	15%	\$14.51	0.98	0.98	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	68.49	10	\$16.08	9%	38%	\$31.50	0.93	0.93	CMPAIR_SYCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	171.22	10	\$16.17	18%	75%	\$12.67	3.86	3.86	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	128.42	15	\$98.79	26%	45%	\$79.46	1.32	1.32	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.28	10	\$1.52	17%	50%	\$47.54	0.06	0.06	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1

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Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	25.68	10	\$4.94	17%	50%	\$25.80	0.34	0.34	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	1.17	1.17	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	25.68	15	\$13.58	17%	50%	\$54.63	0.41	0.41	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	New	239.71	6	\$37.09	26%	45%	\$30.63	1.58	1.58	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	2,156.81	10	\$758.96	25%	45%	\$47.20	20.54	20.54	MATHAND_VSD-Material Handling-7PLN-v5-2
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	28.48	10	\$12.52	10%	50%	\$58.96	2.71	2.71	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	15.82	10	\$4.44	6%	25%	\$37.67	0.72	0.72	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	237.34	12	\$54.95	16%	25%	\$27.44	5.80	5.80	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	63.29	10	\$16.53	16%	36%	\$35.04	2.50	2.50	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	New	5,660.35	10	\$703.96	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	New	8,282.12	15	\$1,902.70	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	3,338.87	10	\$604.92	0%	0%	\$24.30	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1

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Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,677.38	1	\$54.66	0%	0%	\$20.65	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	1,037.91	2	\$14.74	0%	0%	\$7.42	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	69.81	15	\$33.38	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	93.51	15	\$12.13	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	355.08	15	\$45.87	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	New	186.41	10	\$1,864.08	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	64.92	15	\$0.49	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	20.70	15	\$1.98	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	12.57	15	\$2.39	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	12.57	15	\$7.50	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	8.11	15	\$1.78	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	16.23	15	\$8.57	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	16.23	15	\$0.17	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	3,224.74	10	\$758.51	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,339.91	10	\$56.81	15%	75%	\$2.28	95.41	95.41	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	846.86	10	\$91.71	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	87.82	10	\$47.18	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	70.34	10	\$15.54	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	70.34	10	\$6.37	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	5,758.46	10	\$566.02	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	0.79	5	\$0.11	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	51.40	1	\$2.16	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	41.39	10	\$52.56	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	82.97	10	\$52.56	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	3.01	10	\$52.56	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	14.66	10	\$52.56	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	3.76	10	\$52.56	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	237.34	10	\$52.56	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	35.17	10	\$52.56	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	15.86	10	\$52.56	15%	15%	\$16.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	119.56	3	\$508.20	3%	11%	\$144.38	0.04	0.04	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	239.70	3	\$508.20	3%	11%	\$144.38	0.03	0.03	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	8.69	3	\$508.20	3%	11%	\$144.38	0.02	0.02	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	42.34	3	\$508.20	3%	11%	\$144.38	0.08	0.08	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	10.85	3	\$508.20	3%	11%	\$144.38	0.02	0.02	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	New	685.66	3	\$508.20	3%	11%	\$144.38	1.26	1.26	IND_SEM-Motors-AEG-1

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Lumber Wood Products	Process	Strategic Energy Management	employee	New	101.61	3	\$508.20	3%	11%	\$144.38	0.19	0.19	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	45.81	3	\$508.20	3%	11%	\$144.38	0.14	0.09	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	48.85	3	\$486.15	10%	35%	\$168.55	0.15	0.15	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	12.52	3	\$486.15	10%	35%	\$168.55	0.04	0.04	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	New	791.15	3	\$486.15	10%	35%	\$168.55	4.06	4.06	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Process	Commissioning	employee	New	117.24	3	\$486.15	10%	35%	\$168.55	0.60	0.60	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	52.86	3	\$486.15	10%	35%	\$168.55	0.17	0.14	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	48.85	3	\$308.62	0%	0%	\$107.00	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	12.52	3	\$308.62	0%	0%	\$107.00	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	New	791.15	3	\$308.62	0%	0%	\$107.00	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	New	117.24	3	\$308.62	0%	0%	\$107.00	0.00	0.00	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	52.86	3	\$308.62	0%	0%	\$107.00	0.00	0.00	IND_RCX-Process-AEG-1

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Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	61.00	12	\$33.28	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,015.99	11	\$791.68	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Lumber Wood Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	0.90	0.92	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	0.66	0.66	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	0.40	0.40	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	0.35	0.36	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.03	0.03	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	0.44	0.44	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	0.26	0.27	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.11	0.12	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.06	0.06	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.04	0.04	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	0.29	0.30	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	2.43	2.48	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	1.18	1.21	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	0.22	0.22	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	0.97	1.00	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.66	5	\$0.40	18%	30%	\$143.77	1.06	1.10	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	0.14	0.14	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	4.29	4.42	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	6.05	6.09	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	0.31	0.32	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	1.67	1.70	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	1.22	1.22	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	0.73	0.74	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.49	15	\$0.36	7%	33%	\$83.18	8.20	8.73	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.69	15	\$0.60	7%	33%	\$98.03	11.48	12.23	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.04	0.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	1.60	1.64	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	1.64	1.68	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	1.93	2.03	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	2.81	2.96	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	1.92	2.03	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	581.92	20	\$208.24	15%	20%	\$31.73	0.19	0.19	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	36.39	15	\$37.95	20%	50%	\$107.71	1.04	1.04	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	58.23	15	\$26.56	20%	50%	\$47.12	1.67	1.67	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	377.47	10	\$57.61	9%	38%	\$20.47	10.34	10.34	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	283.10	12	\$87.79	9%	38%	\$36.76	7.55	7.55	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	283.10	10	\$91.50	9%	38%	\$43.36	7.55	7.55	PUMP_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	99.16	10	\$10.38	9%	38%	\$14.04	2.72	2.72	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	117.18	10	\$17.17	9%	38%	\$19.65	3.13	3.13	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	180.28	10	\$86.55	9%	38%	\$64.40	4.81	4.81	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	667.30	10	\$52.14	17%	50%	\$10.48	21.33	21.33	CMPAIR_EQPT-Motors-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	1.56	1.56	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.11	0.11	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	762.63	10	\$85.88	9%	15%	\$15.11	4.28	4.28	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	152.53	10	\$37.28	9%	38%	\$32.79	4.07	4.07	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	381.31	10	\$37.48	18%	75%	\$13.18	20.89	20.89	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	285.99	15	\$228.99	26%	45%	\$82.70	5.09	5.09	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	9.53	10	\$3.52	17%	50%	\$49.48	0.30	0.30	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	57.20	10	\$11.45	17%	50%	\$26.85	1.83	1.83	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	5.17	5.17	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	57.20	15	\$31.49	17%	50%	\$56.86	1.83	1.83	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	533.84	6	\$85.98	26%	45%	\$31.88	9.50	9.50	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,724.52	10	\$631.63	25%	45%	\$49.13	32.29	32.29	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	25.45	10	\$11.19	10%	50%	\$58.96	4.77	4.77	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	14.14	10	\$3.97	6%	25%	\$37.67	1.26	1.26	MTR_GRWND>100HP-Motors-7PLN-v5-25

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	212.08	12	\$49.10	16%	25%	\$27.44	9.43	9.43	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	56.56	10	\$14.77	16%	36%	\$35.04	5.42	5.42	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	12,781.01	10	\$1,654.44	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	18,700.93	15	\$4,471.71	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	5,582.22	10	\$604.92	0%	0%	\$14.54	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	6,045.48	1	\$54.66	0%	0%	\$9.14	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,343.60	2	\$14.74	0%	0%	\$3.29	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	242.61	15	\$120.76	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	29.19	15	\$3.94	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	82.06	15	\$11.03	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	155.83	10	\$1,621.90	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	369.57	15	\$2.93	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	71.92	15	\$7.15	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	43.67	15	\$8.63	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	43.67	15	\$27.11	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	46.20	15	\$10.53	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	92.39	15	\$50.80	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	92.39	15	\$1.02	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	2,578.40	10	\$631.25	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,670.49	10	\$47.27	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,469.25	10	\$278.33	15%	75%	\$15.12	131.39	131.39	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	320.83	10	\$172.34	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	256.97	10	\$56.77	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	256.97	10	\$23.27	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	4,604.29	10	\$471.05	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	2.88	5	\$0.40	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	41.10	1	\$1.80	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	114.98	10	\$93.05	15%	15%	\$16.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	243.30	10	\$93.05	15%	15%	\$16.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	9.23	10	\$93.05	15%	15%	\$16.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	31.79	10	\$93.05	15%	15%	\$16.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	7.41	10	\$93.05	15%	15%	\$16.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	212.08	10	\$93.05	15%	15%	\$16.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	128.49	10	\$93.05	15%	15%	\$16.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	18.96	10	\$93.05	15%	15%	\$16.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	332.16	3	\$899.67	3%	11%	\$146.38	0.10	0.10	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	702.87	3	\$899.67	3%	11%	\$146.38	0.08	0.08	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	26.66	3	\$899.67	3%	11%	\$146.38	0.05	0.05	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	91.85	3	\$899.67	3%	11%	\$146.38	0.14	0.15	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	21.40	3	\$899.67	3%	11%	\$146.38	0.04	0.04	IND_SEM-Lighting-AEG-1
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	612.68	3	\$899.67	3%	11%	\$146.38	1.09	1.09	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	Existing	371.18	3	\$899.67	3%	11%	\$146.38	0.66	0.66	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	54.78	3	\$899.67	3%	11%	\$146.38	0.17	0.13	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	105.98	3	\$629.15	0%	0%	\$168.89	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	24.69	3	\$629.15	0%	0%	\$168.89	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	Existing	706.94	3	\$629.15	0%	0%	\$168.89	0.00	0.00	IND_SEM-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Process	Commissioning	employee	Existing	428.29	3	\$629.15	0%	0%	\$168.89	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	63.21	3	\$629.15	0%	0%	\$168.89	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	105.98	3	\$399.40	5%	39%	\$107.21	2.72	2.90	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	24.69	3	\$399.40	5%	39%	\$107.21	0.69	0.71	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	Existing	706.94	3	\$399.40	5%	39%	\$107.21	21.32	21.32	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	Existing	428.29	3	\$399.40	5%	39%	\$107.21	12.91	12.91	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	63.21	3	\$399.40	5%	39%	\$107.21	3.29	2.55	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	51.00	12	\$28.96	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	849.31	11	\$688.82	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	0.33	0.33	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	0.22	0.22	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	0.13	0.13	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.13	0.13	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	0.15	0.15	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.09	0.09	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.04	0.04	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.02	0.02	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.01	0.01	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.06	0.06	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	0.60	0.60	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	0.29	0.29	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.06	0.06	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	0.21	0.21	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.70	5	\$0.40	18%	30%	\$133.40	0.13	0.13	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.03	0.03	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	1.12	1.13	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	1.47	1.47	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	0.18	0.18	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.12	0.12	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.07	0.07	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.41	15	\$0.36	22%	41%	\$90.60	2.97	2.98	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.58	15	\$0.60	22%	41%	\$106.78	4.15	4.17	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	0.35	0.35	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	0.41	0.41	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	0.35	0.36	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	0.28	0.28	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	0.29	0.30	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	605.68	20	\$208.24	15%	20%	\$30.49	0.05	0.05	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	37.88	15	\$37.95	20%	50%	\$103.48	0.26	0.26	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	60.60	15	\$26.56	20%	50%	\$45.27	0.41	0.41	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	392.89	10	\$57.61	9%	38%	\$19.67	2.13	2.13	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	294.67	12	\$87.79	9%	38%	\$35.32	2.07	2.07	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	294.67	10	\$91.50	9%	38%	\$41.66	1.92	1.92	PUMP_VSD-Motors-UN-v1.0-3

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Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	103.20	10	\$10.38	9%	38%	\$13.49	0.56	0.56	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	121.97	10	\$17.17	9%	38%	\$18.88	0.79	0.79	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	187.65	10	\$86.55	9%	38%	\$61.87	1.22	1.22	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	694.55	10	\$52.14	17%	50%	\$10.07	4.39	4.39	CMPAIR_EQPT-Motors-7PLN-v5-2
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	0.45	0.45	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.02	0.02	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	793.77	10	\$85.88	9%	15%	\$14.51	1.09	1.09	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	158.75	10	\$37.28	9%	38%	\$31.50	1.03	1.03	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	396.89	10	\$37.48	18%	75%	\$12.67	4.30	4.30	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	297.66	15	\$228.99	26%	45%	\$79.46	1.47	1.47	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	9.92	10	\$3.52	17%	50%	\$47.54	0.06	0.06	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	59.53	10	\$11.45	17%	50%	\$25.80	0.38	0.38	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	1.30	1.30	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	59.53	15	\$31.49	17%	50%	\$54.63	0.45	0.45	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	New	555.64	6	\$85.98	26%	45%	\$30.63	1.76	1.76	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,794.94	10	\$631.63	25%	45%	\$47.20	8.20	8.20	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	25.45	10	\$11.19	10%	50%	\$58.96	1.16	1.16	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	14.14	10	\$3.97	6%	25%	\$37.67	0.31	0.31	MTR_GRWND>100HP-Motors-7PLN-v5-25
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	212.08	12	\$49.10	16%	25%	\$27.44	2.49	2.49	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	56.56	10	\$14.77	16%	36%	\$35.04	1.07	1.07	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	13,302.93	10	\$1,654.44	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	19,464.59	15	\$4,471.71	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	5,810.18	10	\$604.92	0%	0%	\$13.97	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	6,292.35	1	\$54.66	0%	0%	\$8.79	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	2,439.30	2	\$14.74	0%	0%	\$3.16	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	252.51	15	\$120.76	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.38	15	\$3.94	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	85.41	15	\$11.03	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	New	162.19	10	\$1,621.90	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	384.66	15	\$2.93	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	74.86	15	\$7.15	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	45.45	15	\$8.63	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	45.45	15	\$27.11	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	48.08	15	\$10.53	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	96.16	15	\$50.80	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	96.16	15	\$1.02	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	2,683.69	10	\$631.25	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,779.54	10	\$47.27	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	2,570.09	10	\$278.33	15%	75%	\$14.53	27.62	27.62	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	320.83	10	\$172.34	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	256.97	10	\$56.77	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	256.97	10	\$23.27	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	4,792.31	10	\$471.05	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	2.88	5	\$0.40	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	42.78	1	\$1.80	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	122.79	10	\$93.05	15%	15%	\$16.10	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	246.17	10	\$93.05	15%	15%	\$16.10	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	8.93	10	\$93.05	15%	15%	\$16.10	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	27.00	10	\$93.05	15%	15%	\$16.10	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	6.92	10	\$93.05	15%	15%	\$16.10	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	212.08	10	\$93.05	15%	15%	\$16.10	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	New	128.49	10	\$93.05	15%	15%	\$16.10	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	18.63	10	\$93.05	15%	15%	\$16.10	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	New	354.74	3	\$899.67	3%	11%	\$144.54	0.01	0.01	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	New	711.17	3	\$899.67	3%	11%	\$144.54	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	25.78	3	\$899.67	3%	11%	\$144.54	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	78.00	3	\$899.67	3%	11%	\$144.54	0.01	0.01	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	19.99	3	\$899.67	3%	11%	\$144.54	0.00	0.00	IND_SEM-Lighting-AEG-1

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Metal Mfg	Motors	Strategic Energy Management	employee	New	612.68	3	\$899.67	3%	11%	\$144.54	0.05	0.05	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	New	371.18	3	\$899.67	3%	11%	\$144.54	0.03	0.03	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	53.83	3	\$899.67	3%	11%	\$144.54	0.01	0.00	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	New	90.00	3	\$629.15	5%	39%	\$170.53	0.18	0.18	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	New	23.06	3	\$629.15	5%	39%	\$170.53	0.05	0.05	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	New	706.94	3	\$629.15	5%	39%	\$170.53	2.36	2.36	IND_SEM-HVAC-AEG-1
Metal Mfg	Process	Commissioning	employee	New	428.29	3	\$629.15	5%	39%	\$170.53	1.43	1.43	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	New	62.12	3	\$629.15	5%	39%	\$170.53	0.13	0.10	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	90.00	3	\$399.40	0%	0%	\$108.26	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	23.06	3	\$399.40	0%	0%	\$108.26	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	New	706.94	3	\$399.40	0%	0%	\$108.26	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	New	428.29	3	\$399.40	0%	0%	\$108.26	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	62.12	3	\$399.40	0%	0%	\$108.26	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	53.08	12	\$28.96	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	884.00	11	\$688.82	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.20	45	\$0.84	15%	25%	\$92.12	6.87	7.01	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.42	45	\$0.84	15%	25%	\$92.12	5.00	5.03	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$92.12	3.02	3.05	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$800.06	2.68	2.73	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$800.06	0.21	0.21	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$800.06	0.13	0.13	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$38.53	0.05	0.05	Building Energy Simulation Tool

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Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.56	45	\$0.32	45%	50%	\$38.53	3.34	3.35	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$38.53	2.01	2.04	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.68	0.86	0.88	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.68	0.47	0.47	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.68	0.28	0.29	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$18.32	2.22	2.27	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.41	15	\$0.37	15%	60%	\$95.79	18.51	18.93	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.15	15	\$0.04	15%	75%	\$27.98	8.99	9.19	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.07	15	\$0.37	15%	60%	\$546.76	1.65	1.71	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.32	10	\$0.02	15%	60%	\$8.25	7.41	7.65	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.02	5	\$0.40	18%	30%	\$3,892.89	8.11	8.37	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$9,560.76	1.04	1.06	VENT_DCV-Ventilation-7PLN-v5-5
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.26	15	\$0.65	15%	50%	\$53.00	32.70	33.69	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.02	15	\$0.65	15%	50%	\$53.00	46.15	46.48	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,461.37	2.34	2.43	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.38	5	\$0.75	5%	15%	\$148.55	12.73	13.00	STAT_WIFI-All-7PLN-v2-1

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Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.77	5	\$0.75	5%	15%	\$148.55	9.28	9.32	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.55	5.60	5.66	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.02	15	\$0.36	7%	33%	\$2,252.29	45.77	48.72	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.03	15	\$0.60	7%	33%	\$2,654.48	64.08	68.21	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$11.33	0.23	0.26	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$7.60	8.89	9.11	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,142.74	9.10	9.33	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$83.56	10.71	11.28	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$94.21	15.61	16.45	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$5,121.69	10.67	11.25	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	152.78	20	\$54.67	15%	20%	\$31.73	1.01	1.01	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	19.18	15	\$20.01	20%	50%	\$107.71	5.58	5.58	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	30.70	15	\$14.00	20%	50%	\$47.12	8.92	8.92	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	134.58	10	\$20.54	9%	38%	\$20.47	37.48	37.48	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	100.93	12	\$31.30	9%	38%	\$36.76	27.38	27.38	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	100.93	10	\$32.62	9%	38%	\$43.36	27.38	27.38	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	49.07	10	\$5.14	9%	38%	\$14.04	13.67	13.67	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	57.99	10	\$8.50	9%	38%	\$19.65	15.73	15.73	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	89.22	10	\$42.83	9%	38%	\$64.40	24.20	24.20	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	165.01	10	\$12.89	17%	50%	\$10.48	53.62	53.62	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	50.92	15	\$94.84	16%	38%	\$192.38	3.93	3.93	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.04	10	\$20.84	16%	30%	\$555.19	0.27	0.27	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	188.58	10	\$21.24	9%	15%	\$15.11	10.77	10.77	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	37.72	10	\$9.22	9%	38%	\$32.79	10.23	10.23	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	94.29	10	\$9.27	18%	75%	\$13.18	52.52	52.52	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	70.72	15	\$56.62	26%	45%	\$82.70	12.79	12.79	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.36	10	\$0.87	17%	50%	\$49.48	0.77	0.77	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1

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Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	14.14	10	\$2.83	17%	50%	\$26.85	4.60	4.60	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	105.49	20	\$5.21	17%	50%	\$4.38	13.01	13.01	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	14.14	15	\$7.79	17%	50%	\$56.86	4.60	4.60	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	132.01	6	\$21.26	26%	45%	\$31.88	23.87	23.87	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	235.55	10	\$86.27	25%	45%	\$49.13	44.84	44.84	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	5.46	10	\$2.40	10%	50%	\$58.96	10.39	10.39	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.03	10	\$0.85	6%	25%	\$37.67	2.74	2.74	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	45.46	12	\$10.53	16%	25%	\$27.44	20.55	20.55	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	12.12	10	\$3.17	16%	36%	\$35.04	11.82	11.82	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	3,355.57	10	\$434.36	0%	0%	\$17.36	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	4,909.80	15	\$1,174.02	0%	0%	\$24.70	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	995.08	10	\$604.92	0%	0%	\$81.55	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,587.20	1	\$54.66	0%	0%	\$34.83	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	615.29	2	\$14.74	0%	0%	\$12.52	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	127.90	15	\$63.66	0%	0%	\$51.41	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	29.07	15	\$3.92	0%	0%	\$13.94	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	55.49	15	\$7.46	0%	0%	\$13.89	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	55.56	10	\$578.24	0%	0%	\$1,396.20	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	39.39	15	\$0.31	0%	0%	\$0.82	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	37.92	15	\$3.77	0%	0%	\$10.27	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	23.02	15	\$4.55	0%	0%	\$20.42	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	23.02	15	\$14.29	0%	0%	\$64.12	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	4.92	15	\$1.12	0%	0%	\$23.54	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	9.85	15	\$5.41	0%	0%	\$56.78	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	9.85	15	\$0.11	0%	0%	\$1.14	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	352.18	10	\$86.22	0%	0%	\$32.84	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	364.76	10	\$6.46	0%	0%	\$2.37	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	438.42	10	\$49.42	0%	0%	\$15.12	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	63.34	10	\$34.03	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	50.74	10	\$11.21	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	50.74	10	\$4.60	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	628.89	10	\$64.34	0%	0%	\$13.72	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.57	5	\$0.08	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.61	1	\$0.25	0%	0%	\$44.22	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	86.25	10	\$45.93	15%	15%	\$16.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	182.52	10	\$45.93	15%	15%	\$16.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	6.92	10	\$45.93	15%	15%	\$16.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	17.36	10	\$45.93	15%	15%	\$16.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.04	10	\$45.93	15%	15%	\$16.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	45.46	10	\$45.93	15%	15%	\$16.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	25.37	10	\$45.93	15%	15%	\$16.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	9.96	10	\$45.93	15%	15%	\$16.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	249.18	3	\$444.12	3%	11%	\$146.90	0.78	0.80	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	527.27	3	\$444.12	3%	11%	\$146.90	0.59	0.59	IND_SEM-HVAC-AEG-1

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Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	20.00	3	\$444.12	3%	11%	\$146.90	0.35	0.36	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	50.15	3	\$444.12	3%	11%	\$146.90	0.77	0.82	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	11.68	3	\$444.12	3%	11%	\$146.90	0.19	0.20	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	131.34	3	\$444.12	3%	11%	\$146.90	2.37	2.37	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	73.29	3	\$444.12	3%	11%	\$146.90	1.32	1.32	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	28.76	3	\$444.12	3%	11%	\$146.90	0.89	0.70	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	57.87	3	\$153.56	0%	0%	\$159.48	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	13.48	3	\$153.56	0%	0%	\$159.48	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	Existing	151.55	3	\$153.56	0%	0%	\$159.48	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	Existing	84.56	3	\$153.56	0%	0%	\$159.48	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	33.19	3	\$153.56	0%	0%	\$159.48	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	57.87	3	\$97.48	5%	39%	\$101.24	15.10	16.13	IND_RCX-Motors-AEG-1
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	13.48	3	\$97.48	5%	39%	\$101.24	3.82	3.96	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	151.55	3	\$97.48	5%	39%	\$101.24	46.46	46.46	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	Existing	84.56	3	\$97.48	5%	39%	\$101.24	25.92	25.92	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	33.19	3	\$97.48	5%	39%	\$101.24	17.55	13.64	IND_RCX-Process-AEG-1

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Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	18.18	12	\$10.32	0%	0%	\$67.32	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	49,196.97	12	\$14,678.85	0%	0%	\$35.37	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	302.80	11	\$245.58	0%	0%	\$101.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.22	45	\$0.84	15%	25%	\$88.76	2.52	2.52	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.42	45	\$0.84	15%	25%	\$88.76	1.71	1.71	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$88.76	1.00	1.00	Building Energy Simulation Tool

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Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$747.87	0.98	0.98	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$747.87	0.07	0.07	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$747.87	0.04	0.04	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$37.86	0.02	0.02	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.56	45	\$0.32	45%	50%	\$37.86	1.14	1.14	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$37.86	0.67	0.67	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.61	0.30	0.30	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.61	0.15	0.15	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.61	0.09	0.09	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$17.82	0.46	0.46	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.41	15	\$0.37	15%	60%	\$93.20	4.57	4.57	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.15	15	\$0.04	15%	75%	\$27.23	2.22	2.22	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$506.68	0.43	0.43	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$7.64	1.61	1.61	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.03	5	\$0.40	18%	30%	\$3,612.29	1.01	1.01	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,374.55	0.25	0.25	VENT_DCV-Ventilation-7PLN-v5-5

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Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.27	15	\$0.65	15%	50%	\$51.39	8.57	8.60	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.03	15	\$0.65	15%	50%	\$51.39	11.24	11.24	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,278.49	0.21	0.21	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.40	5	\$0.75	5%	15%	\$143.13	1.39	1.40	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.78	5	\$0.75	5%	15%	\$143.13	0.94	0.94	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.13	0.55	0.55	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.02	15	\$0.36	22%	41%	\$2,453.19	16.36	16.44	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.02	15	\$0.60	22%	41%	\$2,891.26	22.90	23.02	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$12.31	0.05	0.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$7.37	1.93	1.95	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,015.62	2.28	2.30	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$86.31	1.95	1.98	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$97.31	1.54	1.56	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,290.09	1.62	1.64	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	159.02	20	\$54.67	15%	20%	\$30.49	0.29	0.29	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	19.97	15	\$20.01	20%	50%	\$103.48	1.38	1.38	RFG_FHPC-Refrigeration-RTF-v1.3-23
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	31.95	15	\$14.00	20%	50%	\$45.27	2.20	2.20	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	140.07	10	\$20.54	9%	38%	\$19.67	7.71	7.71	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	105.05	12	\$31.30	9%	38%	\$35.32	7.52	7.52	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	105.05	10	\$32.62	9%	38%	\$41.66	6.96	6.96	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	51.07	10	\$5.14	9%	38%	\$13.49	2.81	2.81	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	60.36	10	\$8.50	9%	38%	\$18.88	4.00	4.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	92.86	10	\$42.83	9%	38%	\$61.87	6.15	6.15	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	171.75	10	\$12.89	17%	50%	\$10.07	11.03	11.03	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$184.83	1.14	1.14	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$533.41	0.05	0.05	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1

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Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	196.28	10	\$21.24	9%	15%	\$14.51	2.74	2.74	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	39.26	10	\$9.22	9%	38%	\$31.50	2.60	2.60	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	98.14	10	\$9.27	18%	75%	\$12.67	10.81	10.81	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	73.61	15	\$56.62	26%	45%	\$79.46	3.70	3.70	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.45	10	\$0.87	17%	50%	\$47.54	0.16	0.16	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	14.72	10	\$2.83	17%	50%	\$25.80	0.95	0.95	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$4.21	3.26	3.26	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	14.72	15	\$7.79	17%	50%	\$54.63	1.13	1.13	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	New	137.40	6	\$21.26	26%	45%	\$30.63	4.42	4.42	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	245.17	10	\$86.27	25%	45%	\$47.20	11.39	11.39	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	5.46	10	\$2.40	10%	50%	\$58.96	2.54	2.54	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.03	10	\$0.85	6%	25%	\$37.67	0.67	0.67	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	45.46	12	\$10.53	16%	25%	\$27.44	5.42	5.42	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	12.12	10	\$3.17	16%	36%	\$35.04	2.34	2.34	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	3,492.59	10	\$434.36	0%	0%	\$16.68	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	5,110.29	15	\$1,174.02	0%	0%	\$23.73	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,035.72	10	\$604.92	0%	0%	\$78.35	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,652.01	1	\$54.66	0%	0%	\$33.46	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	640.42	2	\$14.74	0%	0%	\$12.03	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	133.12	15	\$63.66	0%	0%	\$49.39	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.26	15	\$3.92	0%	0%	\$13.39	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	57.76	15	\$7.46	0%	0%	\$13.34	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	New	57.82	10	\$578.24	0%	0%	\$1,341.42	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	41.00	15	\$0.31	0%	0%	\$0.79	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	39.46	15	\$3.77	0%	0%	\$9.87	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	23.96	15	\$4.55	0%	0%	\$19.61	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	23.96	15	\$14.29	0%	0%	\$61.61	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	5.12	15	\$1.12	0%	0%	\$22.62	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	10.25	15	\$5.41	0%	0%	\$54.56	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	10.25	15	\$0.11	0%	0%	\$1.09	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	366.56	10	\$86.22	0%	0%	\$31.55	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	379.65	10	\$6.46	0%	0%	\$2.28	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	456.33	10	\$49.42	0%	0%	\$14.53	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	63.34	10	\$34.03	0%	0%	\$72.06	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	50.74	10	\$11.21	0%	0%	\$29.63	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	50.74	10	\$4.60	0%	0%	\$12.15	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	654.57	10	\$64.34	0%	0%	\$13.19	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	0.57	5	\$0.08	0%	0%	\$31.86	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.84	1	\$0.25	0%	0%	\$42.49	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	92.12	10	\$45.93	15%	15%	\$16.01	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	184.67	10	\$45.93	15%	15%	\$16.01	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	6.70	10	\$45.93	15%	15%	\$16.01	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	14.74	10	\$45.93	15%	15%	\$16.01	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	3.78	10	\$45.93	15%	15%	\$16.01	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	45.46	10	\$45.93	15%	15%	\$16.01	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	25.37	10	\$45.93	15%	15%	\$16.01	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	9.78	10	\$45.93	15%	15%	\$16.01	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	266.12	3	\$444.12	3%	11%	\$143.80	0.04	0.04	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	New	533.50	3	\$444.12	3%	11%	\$143.80	0.03	0.03	IND_SEM-HVAC-AEG-1
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	19.34	3	\$444.12	3%	11%	\$143.80	0.02	0.02	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	42.59	3	\$444.12	3%	11%	\$143.80	0.04	0.04	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	10.91	3	\$444.12	3%	11%	\$143.80	0.01	0.01	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	New	131.34	3	\$444.12	3%	11%	\$143.80	0.11	0.11	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	New	73.29	3	\$444.12	3%	11%	\$143.80	0.06	0.06	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	28.27	3	\$444.12	3%	11%	\$143.80	0.04	0.03	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	New	49.14	3	\$153.56	5%	39%	\$162.76	0.98	0.99	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	12.59	3	\$153.56	5%	39%	\$162.76	0.25	0.26	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	New	151.55	3	\$153.56	5%	39%	\$162.76	5.18	5.18	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	New	84.56	3	\$153.56	5%	39%	\$162.76	2.89	2.89	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	New	32.62	3	\$153.56	5%	39%	\$162.76	0.68	0.56	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	49.14	3	\$97.48	0%	0%	\$103.32	0.00	0.00	IND_RCX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	12.59	3	\$97.48	0%	0%	\$103.32	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	New	151.55	3	\$97.48	0%	0%	\$103.32	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	New	84.56	3	\$97.48	0%	0%	\$103.32	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	32.62	3	\$97.48	0%	0%	\$103.32	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	18.92	12	\$10.32	0%	0%	\$64.68	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$33.98	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	315.16	11	\$245.58	0%	0%	\$97.87	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Utah Industrial Measures Assumptions

Table I-13 Summary of Industrial Measure Assumptions in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.92	20	\$0.11	3%	100%	\$8.82	63.16	63.16	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.16	25	\$0.38	3%	100%	\$43.71	85.76	85.76	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	0.19	25	\$0.05	12%	100%	\$17.99	47.33	47.33	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.12	15	\$0.12	2%	100%	\$31.67	4.38	4.38	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.20	15	\$0.12	2%	100%	\$31.67	7.08	7.08	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	103.22	20	\$66.53	100%	100%	\$47.65	250.12	250.12	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	Existing	1.61	8	\$0.00	100%	100%	\$0.02	30.66	35.49	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	Existing	37.00	15	\$0.00	100%	100%	\$0.00	1,022.63	946.22	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	1.30	17	\$0.02	100%	100%	\$0.51	228.88	218.59	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	Existing	4.64	8	\$0.00	100%	100%	\$0.01	3.84	3.64	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	99.21	15	\$0.24	100%	100%	\$0.04	234.85	222.75	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	8.97	17	\$0.06	100%	100%	\$0.29	55.37	53.46	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.95	20	\$0.11	3%	100%	\$11.74	70.21	70.21	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.24	25	\$0.38	3%	100%	\$41.75	116.70	116.70	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	New	0.22	25	\$0.05	12%	100%	\$15.79	72.10	72.10	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.14	15	\$0.12	2%	100%	\$28.38	5.43	5.43	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.22	15	\$0.12	2%	100%	\$28.38	8.48	8.48	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	New	102.90	20	\$66.53	100%	100%	\$47.80	279.98	279.98	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	New	1.61	8	\$0.00	100%	100%	\$0.02	21.51	20.01	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	New	37.00	15	\$0.00	100%	100%	(\$0.01)	1,001.98	942.97	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	New	1.30	17	\$0.02	100%	100%	\$0.51	196.79	189.61	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	New	4.64	8	\$0.00	100%	100%	\$0.01	1.86	1.55	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Exterior Lighting	Area Lighting	lamps	New	99.21	15	\$0.24	100%	100%	\$0.04	244.55	235.14	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	8.97	17	\$0.06	100%	100%	\$0.29	48.98	47.64	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.84	20	\$0.22	3%	100%	\$8.82	252.73	252.73	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.32	25	\$0.77	3%	100%	\$42.70	339.38	339.38	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	Existing	0.38	25	\$0.10	12%	100%	\$17.99	189.39	189.39	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.24	15	\$0.23	2%	100%	\$31.67	17.53	17.53	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.39	15	\$0.23	2%	100%	\$31.67	28.31	28.31	AEG BEST
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	Existing	206.44	20	\$133.06	100%	100%	\$47.65	1,000.76	1,000.76	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Interior Lighting	General Service Lighting	lamps	Existing	3.21	8	\$0.00	100%	100%	\$0.00	186.82	216.21	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	Existing	74.01	15	\$0.00	100%	100%	\$0.00	6,230.74	5,765.16	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	Existing	2.61	17	\$0.00	100%	100%	\$0.02	1,394.56	1,331.81	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	Existing	9.28	8	\$0.00	100%	100%	\$0.00	23.39	22.15	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	Existing	198.42	15	\$0.02	100%	100%	\$0.00	1,430.91	1,357.15	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	Existing	17.94	17	\$0.00	100%	100%	\$0.01	337.38	325.72	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.89	20	\$0.22	3%	100%	\$8.55	280.90	280.90	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.49	25	\$0.77	3%	100%	\$40.83	461.90	461.90	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	New	0.43	25	\$0.10	12%	100%	\$15.79	288.47	288.47	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.28	15	\$0.23	2%	100%	\$28.38	21.72	21.72	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.43	15	\$0.23	2%	100%	\$28.38	33.91	33.91	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	New	205.81	20	\$133.06	100%	100%	\$47.80	1,120.23	1,120.23	AEG-BEST
Mining	Interior Lighting	General Service Lighting	lamps	New	3.21	8	\$0.00	100%	100%	\$0.00	131.03	121.92	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	New	74.01	15	\$0.00	100%	100%	\$0.00	6,104.94	5,745.35	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	New	2.61	17	\$0.00	100%	100%	\$0.02	1,199.03	1,155.29	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	New	9.28	8	\$0.00	100%	100%	\$0.00	11.36	9.44	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	New	198.42	15	\$0.02	100%	100%	\$0.00	1,490.00	1,432.66	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	New	17.94	17	\$0.00	100%	100%	\$0.01	298.45	290.29	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.92	20	\$0.11	3%	100%	\$8.82	73.09	73.09	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.16	25	\$0.38	3%	100%	\$42.70	98.15	98.15	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.19	25	\$0.05	12%	100%	\$17.99	54.77	54.77	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.12	15	\$0.12	2%	100%	\$31.67	5.07	5.07	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.20	15	\$0.12	2%	100%	\$31.67	8.19	8.19	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	103.22	20	\$66.53	100%	100%	\$47.65	289.41	289.41	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.61	8	\$0.00	100%	100%	\$0.00	87.62	101.41	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	37.00	15	\$0.00	100%	100%	\$0.00	2,922.33	2,703.96	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.30	17	\$0.00	100%	100%	\$0.03	654.07	624.64	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	4.64	8	\$0.00	100%	100%	\$0.00	10.97	10.39	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	99.21	15	\$0.01	100%	100%	\$0.00	671.12	636.53	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	8.97	17	\$0.00	100%	100%	\$0.02	158.24	152.77	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.95	20	\$0.11	3%	100%	\$8.55	81.23	81.23	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.24	25	\$0.38	3%	100%	\$40.83	133.58	133.58	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	New	0.22	25	\$0.05	12%	100%	\$15.79	83.42	83.42	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.14	15	\$0.12	2%	100%	\$28.38	6.28	6.28	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.22	15	\$0.12	2%	100%	\$28.38	9.81	9.81	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	102.90	20	\$66.53	100%	100%	\$47.80	323.96	323.96	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	New	1.61	8	\$0.00	100%	100%	\$0.00	61.46	57.18	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	New	37.00	15	\$0.00	100%	100%	\$0.00	2,863.32	2,694.67	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	1.30	17	\$0.00	100%	100%	\$0.03	562.37	541.85	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	New	4.64	8	\$0.00	100%	100%	\$0.00	5.33	4.43	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	99.21	15	\$0.01	100%	100%	\$0.00	698.84	671.94	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	8.97	17	\$0.00	100%	100%	\$0.02	139.98	136.15	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.20	20	\$0.02	3%	100%	\$8.82	21.57	21.57	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.26	25	\$0.09	3%	100%	\$42.70	28.96	28.96	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.04	25	\$0.01	12%	100%	\$17.99	16.16	16.16	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.03	15	\$0.03	2%	100%	\$31.67	1.50	1.50	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.04	15	\$0.03	2%	100%	\$31.67	2.42	2.42	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	22.94	20	\$14.78	100%	100%	\$47.65	85.40	85.40	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.36	8	\$0.00	100%	100%	\$0.00	34.70	40.16	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	8.22	15	\$0.00	100%	100%	\$0.00	1,157.23	1,070.76	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.29	17	\$0.00	100%	100%	\$0.06	259.01	247.36	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	1.03	8	\$0.00	100%	100%	\$0.00	4.34	4.11	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	22.05	15	\$0.01	100%	100%	\$0.00	265.76	252.06	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	1.99	17	\$0.00	100%	100%	\$0.03	62.66	60.50	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.21	20	\$0.02	3%	100%	\$8.55	23.97	23.97	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.28	25	\$0.09	3%	100%	\$40.83	39.42	39.42	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	0.05	25	\$0.01	12%	100%	\$15.79	24.62	24.62	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.03	15	\$0.03	2%	100%	\$28.38	1.85	1.85	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.05	15	\$0.03	2%	100%	\$28.38	2.89	2.89	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	22.87	20	\$14.78	100%	100%	\$47.80	95.60	95.60	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	New	0.36	8	\$0.00	100%	100%	\$0.00	24.34	22.64	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	New	8.22	15	\$0.00	100%	100%	\$0.00	1,133.86	1,067.08	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	0.29	17	\$0.00	100%	100%	\$0.06	222.69	214.57	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	New	1.03	8	\$0.00	100%	100%	\$0.00	2.11	1.75	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	22.05	15	\$0.01	100%	100%	\$0.00	276.74	266.09	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	1.99	17	\$0.00	100%	100%	\$0.03	55.43	53.92	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.73	20	\$0.09	3%	100%	\$8.82	96.34	96.34	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.93	25	\$0.31	3%	100%	\$42.70	129.37	129.37	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	0.15	25	\$0.04	12%	100%	\$17.99	72.20	72.20	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.10	15	\$0.09	2%	100%	\$31.67	6.68	6.68	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.16	15	\$0.09	2%	100%	\$31.67	10.79	10.79	AEG BEST
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	82.58	20	\$53.22	100%	100%	\$47.65	381.49	381.49	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	Existing	1.28	8	\$0.00	100%	100%	\$0.00	36.75	42.53	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	Existing	29.60	15	\$0.00	100%	100%	\$0.00	1,225.55	1,133.98	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	1.04	17	\$0.00	100%	100%	\$0.03	274.30	261.96	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	Existing	3.71	8	\$0.00	100%	100%	\$0.00	4.60	4.36	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	79.37	15	\$0.01	100%	100%	\$0.00	281.45	266.95	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	7.17	17	\$0.00	100%	100%	\$0.02	66.36	64.07	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.76	20	\$0.09	3%	100%	\$8.55	107.08	107.08	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.99	25	\$0.31	3%	100%	\$40.83	176.08	176.08	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	0.17	25	\$0.04	12%	100%	\$15.79	109.97	109.97	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.11	15	\$0.09	2%	100%	\$28.38	8.28	8.28	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.17	15	\$0.09	2%	100%	\$28.38	12.93	12.93	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	82.32	20	\$53.22	100%	100%	\$47.80	427.04	427.04	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	New	1.28	8	\$0.00	100%	100%	\$0.00	25.77	23.98	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	New	29.60	15	\$0.00	100%	100%	\$0.00	1,200.81	1,130.08	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	1.04	17	\$0.00	100%	100%	\$0.03	235.84	227.24	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	New	3.71	8	\$0.00	100%	100%	\$0.00	2.23	1.86	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	79.37	15	\$0.01	100%	100%	\$0.00	293.08	281.80	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	7.17	17	\$0.00	100%	100%	\$0.02	58.70	57.10	USDOE SSL Projections - 2016
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.84	20	\$0.22	3%	100%	\$8.82	118.34	118.34	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.32	25	\$0.77	3%	100%	\$42.70	158.91	158.91	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	0.38	25	\$0.10	12%	100%	\$17.99	88.68	88.68	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.24	15	\$0.23	2%	100%	\$31.67	8.21	8.21	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.39	15	\$0.23	2%	100%	\$31.67	13.26	13.26	AEG BEST
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	206.44	20	\$133.06	100%	100%	\$47.65	468.61	468.61	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	Existing	3.21	8	\$0.00	100%	100%	\$0.00	55.25	63.94	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	Existing	74.01	15	\$0.00	100%	100%	\$0.00	1,842.59	1,704.91	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	2.61	17	\$0.00	100%	100%	\$0.02	412.41	393.85	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	Existing	9.28	8	\$0.00	100%	100%	\$0.00	6.92	6.55	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	198.42	15	\$0.02	100%	100%	\$0.00	423.16	401.35	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	17.94	17	\$0.00	100%	100%	\$0.01	99.77	96.32	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.89	20	\$0.22	3%	100%	\$8.55	131.53	131.53	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.49	25	\$0.77	3%	100%	\$40.83	216.28	216.28	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	0.43	25	\$0.10	12%	100%	\$15.79	135.08	135.08	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.28	15	\$0.23	2%	100%	\$28.38	10.17	10.17	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.43	15	\$0.23	2%	100%	\$28.38	15.88	15.88	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	205.81	20	\$133.06	100%	100%	\$47.80	524.55	524.55	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	New	3.21	8	\$0.00	100%	100%	\$0.00	38.75	36.05	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	New	74.01	15	\$0.00	100%	100%	\$0.00	1,805.39	1,699.05	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	2.61	17	\$0.00	100%	100%	\$0.02	354.58	341.65	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	New	9.28	8	\$0.00	100%	100%	\$0.00	3.36	2.79	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	198.42	15	\$0.02	100%	100%	\$0.00	440.63	423.67	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	17.94	17	\$0.00	100%	100%	\$0.01	88.26	85.85	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.37	20	\$0.04	3%	100%	\$8.82	510.61	510.61	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.46	25	\$0.15	3%	100%	\$42.70	685.68	685.68	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.08	25	\$0.02	12%	100%	\$17.99	382.64	382.64	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.05	15	\$0.05	2%	100%	\$31.67	35.41	35.41	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.08	15	\$0.05	2%	100%	\$31.67	57.21	57.21	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	41.29	20	\$26.61	100%	100%	\$47.65	2,021.94	2,021.94	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.64	8	\$0.00	100%	100%	\$0.00	211.26	244.50	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	14.80	15	\$0.00	100%	100%	\$0.00	7,045.85	6,519.36	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.52	17	\$0.00	100%	100%	\$0.02	1,576.99	1,506.03	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	1.86	8	\$0.00	100%	100%	\$0.00	26.45	25.05	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	39.68	15	\$0.00	100%	100%	\$0.00	1,618.10	1,534.70	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	3.59	17	\$0.00	100%	100%	\$0.01	381.52	368.33	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.38	20	\$0.04	3%	100%	\$8.55	567.54	567.54	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.50	25	\$0.15	3%	100%	\$40.83	933.22	933.22	AEG BEST
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.09	25	\$0.02	12%	100%	\$15.79	582.83	582.83	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.06	15	\$0.05	2%	100%	\$28.38	43.89	43.89	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.09	15	\$0.05	2%	100%	\$28.38	68.52	68.52	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	41.16	20	\$26.61	100%	100%	\$47.80	2,263.33	2,263.33	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	0.64	8	\$0.00	100%	100%	\$0.00	148.18	137.87	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	14.80	15	\$0.00	100%	100%	\$0.00	6,903.59	6,496.96	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	0.52	17	\$0.00	100%	100%	\$0.02	1,355.89	1,306.42	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	1.86	8	\$0.00	100%	100%	\$0.00	12.85	10.68	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	39.68	15	\$0.00	100%	100%	\$0.00	1,684.92	1,620.08	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	3.59	17	\$0.00	100%	100%	\$0.01	337.50	328.27	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.29	20	\$0.27	3%	100%	\$8.82	27.53	27.53	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.90	25	\$0.96	3%	100%	\$42.70	36.97	36.97	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	0.47	25	\$0.13	12%	100%	\$17.99	20.63	20.63	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.30	15	\$0.29	2%	100%	\$31.67	1.91	1.91	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.49	15	\$0.29	2%	100%	\$31.67	3.08	3.08	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	258.05	20	\$166.32	100%	100%	\$47.65	109.02	109.02	AEG-BEST
Wastewater	Interior Lighting	General Service Lighting	lamps	Existing	4.01	8	\$0.00	100%	100%	\$0.00	14.58	16.87	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	Existing	92.51	15	\$0.00	100%	100%	\$0.00	486.26	449.93	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	3.26	17	\$0.01	100%	100%	\$0.08	108.83	103.94	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	Existing	11.60	8	\$0.00	100%	100%	\$0.00	1.83	1.73	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	248.02	15	\$0.09	100%	100%	\$0.01	111.67	105.92	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	22.42	17	\$0.02	100%	100%	\$0.04	26.33	25.42	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.37	20	\$0.27	3%	100%	\$8.55	30.60	30.60	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.11	25	\$0.96	3%	100%	\$40.83	50.32	50.32	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	New	0.54	25	\$0.13	12%	100%	\$15.79	31.43	31.43	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.35	15	\$0.29	2%	100%	\$28.38	2.37	2.37	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.54	15	\$0.29	2%	100%	\$28.38	3.69	3.69	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	257.26	20	\$166.32	100%	100%	\$47.80	122.04	122.04	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	General Service Lighting	lamps	New	4.01	8	\$0.00	100%	100%	\$0.00	10.23	9.51	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	New	92.51	15	\$0.00	100%	100%	\$0.00	476.44	448.38	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	New	3.26	17	\$0.01	100%	100%	\$0.08	93.58	90.16	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	New	11.60	8	\$0.00	100%	100%	\$0.00	0.89	0.74	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Area Lighting	lamps	New	248.02	15	\$0.09	100%	100%	\$0.01	116.28	111.81	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	22.42	17	\$0.02	100%	100%	\$0.04	23.29	22.65	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.29	20	\$0.27	3%	100%	\$8.82	213.06	213.06	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.90	25	\$0.96	3%	100%	\$42.70	286.11	286.11	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	Existing	0.47	25	\$0.13	12%	100%	\$17.99	159.66	159.66	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.30	15	\$0.29	2%	100%	\$31.67	14.78	14.78	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.49	15	\$0.29	2%	100%	\$31.67	23.87	23.87	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	258.05	20	\$166.32	100%	100%	\$47.65	843.67	843.67	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	Existing	4.01	8	\$0.00	100%	100%	\$0.00	112.83	130.58	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	Existing	92.51	15	\$0.00	100%	100%	\$0.00	3,762.94	3,481.76	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	Existing	3.26	17	\$0.00	100%	100%	\$0.04	842.21	804.32	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	Existing	11.60	8	\$0.00	100%	100%	\$0.00	14.13	13.38	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	Existing	248.02	15	\$0.04	100%	100%	\$0.00	864.17	819.63	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	Existing	22.42	17	\$0.01	100%	100%	\$0.02	203.75	196.71	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.37	20	\$0.27	3%	100%	\$8.55	236.81	236.81	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.11	25	\$0.96	3%	100%	\$40.83	389.40	389.40	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	New	0.54	25	\$0.13	12%	100%	\$15.79	243.19	243.19	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.35	15	\$0.29	2%	100%	\$28.38	18.31	18.31	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.54	15	\$0.29	2%	100%	\$28.38	28.59	28.59	AEG BEST
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	257.26	20	\$166.32	100%	100%	\$47.80	944.40	944.40	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	New	4.01	8	\$0.00	100%	100%	\$0.00	79.14	73.63	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	New	92.51	15	\$0.00	100%	100%	\$0.00	3,686.96	3,469.79	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	New	3.26	17	\$0.00	100%	100%	\$0.04	724.13	697.71	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	New	11.60	8	\$0.00	100%	100%	\$0.00	6.86	5.70	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	New	248.02	15	\$0.04	100%	100%	\$0.00	899.86	865.23	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	New	22.42	17	\$0.01	100%	100%	\$0.02	180.24	175.32	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.84	20	\$0.22	3%	100%	\$8.82	173.58	173.58	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.32	25	\$0.77	3%	100%	\$42.70	233.09	233.09	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.38	25	\$0.10	12%	100%	\$17.99	130.08	130.08	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.24	15	\$0.23	2%	100%	\$31.67	12.04	12.04	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.39	15	\$0.23	2%	100%	\$31.67	19.45	19.45	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	206.44	20	\$133.06	100%	100%	\$47.65	687.34	687.34	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.21	8	\$0.00	100%	100%	\$0.00	62.74	72.62	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	74.01	15	\$0.00	100%	100%	\$0.00	2,092.64	1,936.27	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.61	17	\$0.00	100%	100%	\$0.01	468.37	447.30	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	9.28	8	\$0.00	100%	100%	\$0.00	7.86	7.44	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	198.42	15	\$0.01	100%	100%	\$0.00	480.58	455.81	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	17.94	17	\$0.00	100%	100%	\$0.01	113.31	109.40	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.89	20	\$0.22	3%	100%	\$8.55	192.93	192.93	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.49	25	\$0.77	3%	100%	\$40.83	317.24	317.24	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	0.43	25	\$0.10	12%	100%	\$15.79	198.13	198.13	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.28	15	\$0.23	2%	100%	\$28.38	14.92	14.92	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.43	15	\$0.23	2%	100%	\$28.38	23.29	23.29	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	205.81	20	\$133.06	100%	100%	\$47.80	769.40	769.40	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	New	3.21	8	\$0.00	100%	100%	\$0.00	44.01	40.95	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	New	74.01	15	\$0.00	100%	100%	\$0.00	2,050.39	1,929.62	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	2.61	17	\$0.00	100%	100%	\$0.01	402.70	388.01	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	New	9.28	8	\$0.00	100%	100%	\$0.00	3.82	3.17	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	198.42	15	\$0.01	100%	100%	\$0.00	500.43	481.17	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	17.94	17	\$0.00	100%	100%	\$0.01	100.24	97.50	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.84	20	\$0.22	3%	100%	\$8.82	772.98	772.98	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.32	25	\$0.77	3%	100%	\$42.70	1,038.00	1,038.00	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.38	25	\$0.10	12%	100%	\$17.99	579.25	579.25	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.24	15	\$0.23	2%	100%	\$31.67	53.61	53.61	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.39	15	\$0.23	2%	100%	\$31.67	86.60	86.60	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	206.44	20	\$133.06	100%	100%	\$47.65	3,060.85	3,060.85	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.21	8	\$0.00	100%	100%	\$0.00	181.02	209.50	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	74.01	15	\$0.00	100%	100%	\$0.00	6,037.22	5,586.10	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.61	17	\$0.00	100%	100%	\$0.01	1,351.24	1,290.44	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	9.28	8	\$0.00	100%	100%	\$0.00	22.67	21.46	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	198.42	15	\$0.01	100%	100%	\$0.00	1,386.47	1,315.00	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	17.94	17	\$0.00	100%	100%	\$0.01	326.90	315.60	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.89	20	\$0.22	3%	100%	\$8.55	859.15	859.15	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.49	25	\$0.77	3%	100%	\$40.83	1,412.73	1,412.73	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.43	25	\$0.10	12%	100%	\$15.79	882.29	882.29	AEG BEST
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.28	15	\$0.23	2%	100%	\$28.38	66.44	66.44	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.43	15	\$0.23	2%	100%	\$28.38	103.72	103.72	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	205.81	20	\$133.06	100%	100%	\$47.80	3,426.27	3,426.27	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	3.21	8	\$0.00	100%	100%	\$0.00	126.96	118.13	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	74.01	15	\$0.00	100%	100%	\$0.00	5,915.32	5,566.90	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	2.61	17	\$0.00	100%	100%	\$0.01	1,161.79	1,119.40	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	9.28	8	\$0.00	100%	100%	\$0.00	11.01	9.15	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	198.42	15	\$0.01	100%	100%	\$0.00	1,443.72	1,388.16	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	17.94	17	\$0.00	100%	100%	\$0.01	289.18	281.27	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.92	20	\$0.11	3%	100%	\$8.82	139.47	139.47	AEG BEST
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.16	25	\$0.38	3%	100%	\$42.70	187.29	187.29	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	0.19	25	\$0.05	12%	100%	\$17.99	104.51	104.51	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.12	15	\$0.12	2%	100%	\$31.67	9.67	9.67	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.20	15	\$0.12	2%	100%	\$31.67	15.63	15.63	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	103.22	20	\$66.53	100%	100%	\$47.65	552.27	552.27	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	Existing	1.61	8	\$0.00	100%	100%	\$0.00	48.74	56.41	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	Existing	37.00	15	\$0.00	100%	100%	\$0.00	1,625.48	1,504.02	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	1.30	17	\$0.00	100%	100%	\$0.13	363.81	347.44	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	Existing	4.64	8	\$0.00	100%	100%	\$0.00	6.10	5.78	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	99.21	15	\$0.06	100%	100%	\$0.01	373.30	354.05	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	8.97	17	\$0.02	100%	100%	\$0.07	88.02	84.97	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.95	20	\$0.11	3%	100%	\$8.55	155.02	155.02	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.24	25	\$0.38	3%	100%	\$40.83	254.90	254.90	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	0.22	25	\$0.05	12%	100%	\$15.79	159.19	159.19	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.14	15	\$0.12	2%	100%	\$28.38	11.99	11.99	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.22	15	\$0.12	2%	100%	\$28.38	18.71	18.71	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	102.90	20	\$66.53	100%	100%	\$47.80	618.20	618.20	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	New	1.61	8	\$0.00	100%	100%	\$0.00	34.18	31.81	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	New	37.00	15	\$0.00	100%	100%	\$0.00	1,592.66	1,498.85	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	1.30	17	\$0.00	100%	100%	\$0.13	312.80	301.39	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	New	4.64	8	\$0.00	100%	100%	\$0.00	2.96	2.46	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	99.21	15	\$0.06	100%	100%	\$0.01	388.71	373.75	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	8.97	17	\$0.02	100%	100%	\$0.07	77.86	75.73	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.84	20	\$0.22	3%	100%	\$8.82	8.37	8.37	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.32	25	\$0.77	3%	100%	\$42.70	11.24	11.24	AEG BEST
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	0.38	25	\$0.10	12%	100%	\$17.99	6.28	6.28	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.24	15	\$0.23	2%	100%	\$31.67	0.58	0.58	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.39	15	\$0.23	2%	100%	\$31.67	0.94	0.94	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	206.44	20	\$133.06	100%	100%	\$47.65	33.16	33.16	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	Existing	3.21	8	\$0.00	100%	100%	\$0.00	6.97	8.06	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	Existing	74.01	15	\$0.00	100%	100%	\$0.00	232.41	215.04	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	2.61	17	\$0.01	100%	100%	\$0.15	52.02	49.68	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	Existing	9.28	8	\$0.00	100%	100%	\$0.00	0.87	0.83	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	198.42	15	\$0.14	100%	100%	\$0.01	53.37	50.62	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	17.94	17	\$0.04	100%	100%	\$0.09	12.58	12.15	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.89	20	\$0.22	3%	100%	\$8.55	9.31	9.31	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.49	25	\$0.77	3%	100%	\$40.83	15.30	15.30	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	0.43	25	\$0.10	12%	100%	\$15.79	9.56	9.56	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.28	15	\$0.23	2%	100%	\$28.38	0.72	0.72	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.43	15	\$0.23	2%	100%	\$28.38	1.12	1.12	AEG BEST
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	205.81	20	\$133.06	100%	100%	\$47.80	37.12	37.12	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	New	3.21	8	\$0.00	100%	100%	\$0.00	4.89	4.55	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	New	74.01	15	\$0.00	100%	100%	\$0.00	227.72	214.30	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	2.61	17	\$0.01	100%	100%	\$0.15	44.72	43.09	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	New	9.28	8	\$0.00	100%	100%	\$0.00	0.42	0.35	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	198.42	15	\$0.14	100%	100%	\$0.01	55.58	53.44	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	17.94	17	\$0.04	100%	100%	\$0.09	11.13	10.83	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.92	20	\$0.11	3%	100%	\$8.82	186.51	186.51	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.16	25	\$0.38	3%	100%	\$42.70	250.45	250.45	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.19	25	\$0.05	12%	100%	\$17.99	139.76	139.76	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.12	15	\$0.12	2%	100%	\$31.67	12.94	12.94	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.20	15	\$0.12	2%	100%	\$31.67	20.89	20.89	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	103.22	20	\$66.53	100%	100%	\$47.65	738.53	738.53	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.61	8	\$0.00	100%	100%	\$0.00	96.37	111.54	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	37.00	15	\$0.00	100%	100%	\$0.00	3,214.18	2,974.01	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.30	17	\$0.00	100%	100%	\$0.05	719.39	687.02	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	4.64	8	\$0.00	100%	100%	\$0.00	12.07	11.43	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	99.21	15	\$0.02	100%	100%	\$0.00	738.15	700.10	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	8.97	17	\$0.01	100%	100%	\$0.03	174.04	168.03	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.95	20	\$0.11	3%	100%	\$8.55	207.30	207.30	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.24	25	\$0.38	3%	100%	\$40.83	340.87	340.87	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	0.22	25	\$0.05	12%	100%	\$15.79	212.88	212.88	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.14	15	\$0.12	2%	100%	\$28.38	16.03	16.03	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.22	15	\$0.12	2%	100%	\$28.38	25.03	25.03	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	102.90	20	\$66.53	100%	100%	\$47.80	826.70	826.70	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	New	1.61	8	\$0.00	100%	100%	\$0.00	67.60	62.89	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	New	37.00	15	\$0.00	100%	100%	\$0.00	3,149.28	2,963.79	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	1.30	17	\$0.00	100%	100%	\$0.05	618.53	595.96	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	New	4.64	8	\$0.00	100%	100%	\$0.00	5.86	4.87	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	99.21	15	\$0.02	100%	100%	\$0.00	768.63	739.05	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	8.97	17	\$0.01	100%	100%	\$0.03	153.96	149.75	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.84	20	\$0.22	3%	100%	\$8.82	1,186.26	1,186.26	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.32	25	\$0.77	3%	100%	\$42.70	1,592.99	1,592.99	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.38	25	\$0.10	12%	100%	\$17.99	888.96	888.96	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.24	15	\$0.23	2%	100%	\$31.67	82.28	82.28	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.39	15	\$0.23	2%	100%	\$31.67	132.90	132.90	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	206.44	20	\$133.06	100%	100%	\$47.65	4,697.40	4,697.40	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.21	8	\$0.00	100%	100%	\$0.00	446.17	516.37	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	74.01	15	\$0.00	100%	100%	\$0.00	14,880.35	13,768.45	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.61	17	\$0.00	100%	100%	\$0.02	3,330.50	3,180.64	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	9.28	8	\$0.00	100%	100%	\$0.00	55.87	52.90	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	198.42	15	\$0.01	100%	100%	\$0.00	3,417.32	3,241.18	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	17.94	17	\$0.00	100%	100%	\$0.01	805.74	777.89	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.89	20	\$0.22	3%	100%	\$8.55	1,318.51	1,318.51	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	2.49	25	\$0.77	3%	100%	\$40.83	2,168.07	2,168.07	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	0.43	25	\$0.10	12%	100%	\$15.79	1,354.03	1,354.03	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.28	15	\$0.23	2%	100%	\$28.38	101.96	101.96	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.43	15	\$0.23	2%	100%	\$28.38	159.18	159.18	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	205.81	20	\$133.06	100%	100%	\$47.80	5,258.20	5,258.20	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	New	3.21	8	\$0.00	100%	100%	\$0.00	312.94	291.17	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	New	74.01	15	\$0.00	100%	100%	\$0.00	14,579.91	13,721.13	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	2.61	17	\$0.00	100%	100%	\$0.02	2,863.54	2,759.07	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	New	9.28	8	\$0.00	100%	100%	\$0.00	27.13	22.55	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	198.42	15	\$0.01	100%	100%	\$0.00	3,558.45	3,421.50	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	17.94	17	\$0.00	100%	100%	\$0.01	712.77	693.28	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	20.91	21.35	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	14.97	15.04	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	9.03	9.14	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	8.15	8.32	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	0.63	0.64	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	0.38	0.39	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.16	0.16	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	9.98	10.03	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	6.02	6.09	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	2.63	2.68	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	1.41	1.41	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	0.85	0.86	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	6.23	6.36	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	51.88	53.04	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	25.19	25.75	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	4.46	4.61	CHLR_VSPMP-Cooling-SCE-17_R0-86

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	20.02	20.66	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.05	5	\$0.40	18%	30%	\$1,451.46	24.39	25.17	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	3.14	3.20	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	99.29	102.31	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	137.70	138.66	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	7.25	7.51	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	38.77	39.58	STAT_WIFI-All-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	27.76	27.89	STAT_WIFI-All-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	16.75	16.94	STAT_WIFI-All-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.04	15	\$0.36	3%	17%	\$823.01	86.38	91.99	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.06	15	\$0.60	3%	17%	\$969.98	124.20	132.23	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	0.89	1.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	34.51	35.39	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	35.34	36.24	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	41.58	43.81	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	60.64	63.89	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	41.45	43.68	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	837.51	20	\$316.53	15%	20%	\$27.94	77.39	77.39	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	27.20	15	\$29.96	20%	50%	\$94.84	221.30	221.30	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	43.52	15	\$20.97	20%	50%	\$41.48	354.08	354.08	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	16.15	10	\$2.60	9%	38%	\$18.02	125.86	125.86	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	12.11	12	\$3.97	9%	38%	\$32.37	91.94	91.94	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	12.11	10	\$4.13	9%	38%	\$38.18	91.94	91.94	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	55.32	10	\$6.11	9%	38%	\$12.36	431.21	431.21	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	65.38	10	\$10.12	9%	38%	\$17.30	496.32	496.32	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	100.59	10	\$51.00	9%	38%	\$56.70	763.57	763.57	FAN_VSD-Motors-UN-v1.0-5
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	37.37	10	\$3.08	17%	50%	\$9.23	339.87	339.87	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	24.92	24.92	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1

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Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	1.69	1.69	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	42.71	10	\$5.08	9%	15%	\$13.30	68.26	68.26	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	8.54	10	\$2.21	9%	38%	\$28.87	64.85	64.85	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	21.36	10	\$2.22	18%	75%	\$11.61	332.93	332.93	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	16.02	15	\$13.55	26%	45%	\$72.82	81.06	81.06	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.53	10	\$0.21	17%	50%	\$43.57	4.86	4.86	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	3.20	10	\$0.68	17%	50%	\$23.64	29.13	29.13	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	82.46	82.46	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	3.20	15	\$1.86	17%	50%	\$50.06	29.13	29.13	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	Existing	29.90	6	\$5.09	26%	45%	\$28.07	151.32	151.32	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	115.75	10	\$44.78	25%	45%	\$43.26	616.63	616.63	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	2.94	10	\$1.37	10%	50%	\$51.91	125.48	125.48	MTR_GRWND<100HP-Motors-7PLN-v5-17
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.64	10	\$0.49	6%	25%	\$33.17	33.11	33.11	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	24.54	12	\$6.00	16%	25%	\$24.16	248.34	248.34	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	6.54	10	\$1.80	16%	36%	\$30.85	142.79	142.79	DRV_SYNBELT-Motors-7PLN-v5-1

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Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,664.96	10	\$227.62	8%	17%	\$15.29	276.93	276.93	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	Existing	2,436.13	15	\$615.23	8%	17%	\$21.75	405.20	405.20	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	244.41	10	\$604.92	15%	17%	\$276.78	6.51	6.51	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	787.53	1	\$54.66	15%	17%	\$58.52	29.11	29.11	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	305.30	2	\$14.74	15%	17%	\$21.04	11.28	11.28	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	181.33	15	\$95.32	15%	15%	\$45.27	19.32	19.32	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	4.71	15	\$0.67	15%	30%	\$12.27	35.71	35.71	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	4.45	15	\$0.63	8%	16%	\$12.23	12.97	12.97	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	Existing	6.82	10	\$75.00	15%	15%	\$1,229.32	1.93	1.93	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	2.78	15	\$0.02	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	53.76	15	\$5.64	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	32.64	15	\$6.81	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	32.64	15	\$21.40	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.35	15	\$0.08	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.69	15	\$0.40	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.69	15	\$0.01	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	173.07	10	\$44.75	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	179.25	10	\$3.35	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	96.98	10	\$11.55	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	36.51	10	\$20.71	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	29.24	10	\$6.82	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	29.24	10	\$2.80	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	309.05	10	\$33.39	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	0.33	5	\$0.05	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	2.76	1	\$0.13	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	9.10	10	\$8.85	15%	15%	\$14.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	19.65	10	\$8.85	15%	15%	\$14.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	0.74	10	\$8.85	15%	15%	\$14.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	2.41	10	\$8.85	15%	15%	\$14.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.56	10	\$8.85	15%	15%	\$14.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	19.63	10	\$8.85	15%	15%	\$14.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	Existing	14.62	10	\$8.85	15%	15%	\$14.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	2.41	10	\$8.85	15%	15%	\$14.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	Existing	26.30	3	\$52.82	3%	11%	\$79.02	2.34	2.39	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	Existing	56.75	3	\$52.82	3%	11%	\$79.02	1.76	1.77	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	2.15	3	\$52.82	3%	11%	\$79.02	1.06	1.07	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	6.96	3	\$52.82	3%	11%	\$79.02	2.99	3.19	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	1.62	3	\$52.82	3%	11%	\$79.02	0.76	0.78	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	Existing	56.70	3	\$52.82	3%	11%	\$79.02	28.62	28.62	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	Existing	42.24	3	\$52.82	3%	11%	\$79.02	21.32	21.32	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	6.97	3	\$52.82	3%	11%	\$79.02	6.07	4.72	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	Existing	8.03	3	\$65.07	0%	0%	\$145.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Exterior Lighting	Commissioning	employee	Existing	1.87	3	\$65.07	0%	0%	\$145.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	Existing	65.43	3	\$65.07	0%	0%	\$145.50	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	Existing	48.74	3	\$65.07	0%	0%	\$145.50	0.00	0.00	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	Existing	8.05	3	\$65.07	0%	0%	\$145.50	0.00	0.00	IND_SEM-Lighting-AEG-1

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Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	8.03	3	\$41.30	5%	39%	\$92.37	58.64	62.62	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	1.87	3	\$41.30	5%	39%	\$92.37	14.85	15.36	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	Existing	65.43	3	\$41.30	5%	39%	\$92.37	561.31	561.31	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	Existing	48.74	3	\$41.30	5%	39%	\$92.37	418.11	418.11	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	8.05	3	\$41.30	5%	39%	\$92.37	119.02	92.50	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	2.18	12	\$1.31	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	36.33	11	\$31.12	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	10.87	10.88	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	7.25	7.25	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	4.25	4.25	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	4.24	4.24	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.31	0.31	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.18	0.18	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.08	0.08	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	4.83	4.83	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	2.83	2.83	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	1.34	1.34	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	0.67	0.67	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	0.39	0.39	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	1.29	1.29	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	13.39	13.39	AEG-BEST

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Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	6.50	6.50	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	1.29	1.29	CHLR_VSPMP-Cooling-SCE-17_R0-86
Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	4.64	4.64	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.06	5	\$0.40	18%	30%	\$1,351.75	3.11	3.11	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	0.85	0.85	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	27.26	27.30	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	35.20	35.20	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	0.46	0.46	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	6.65	6.66	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	4.43	4.43	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	2.60	2.60	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.03	15	\$0.36	22%	41%	\$898.43	72.69	72.99	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.05	15	\$0.60	22%	41%	\$1,058.86	101.76	102.19	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.18	0.18	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	8.03	8.12	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	9.88	9.97	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	7.67	7.81	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	6.08	6.19	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	6.37	6.49	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	New	920.66	20	\$316.53	15%	20%	\$25.42	27.29	27.29	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	29.90	15	\$29.96	20%	50%	\$86.27	60.31	60.31	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	New	47.84	15	\$20.97	20%	50%	\$37.74	96.50	96.50	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	17.75	10	\$2.60	9%	38%	\$16.40	27.63	27.63	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	New	13.31	12	\$3.97	9%	38%	\$29.44	30.97	30.97	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	13.31	10	\$4.13	9%	38%	\$34.73	29.12	29.12	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	60.82	10	\$6.11	9%	38%	\$11.24	94.65	94.65	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	New	71.87	10	\$10.12	9%	38%	\$15.74	157.19	157.19	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	110.57	10	\$51.00	9%	38%	\$51.58	241.83	241.83	FAN_VSD-Motors-UN-v1.0-5

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Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	41.09	10	\$3.08	17%	50%	\$8.40	74.60	74.60	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	8.75	8.75	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	0.37	0.37	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	46.96	10	\$5.08	9%	15%	\$12.10	21.62	21.62	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	New	9.39	10	\$2.21	9%	38%	\$26.26	20.54	20.54	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	23.48	10	\$2.22	18%	75%	\$10.56	73.08	73.08	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	17.61	15	\$13.55	26%	45%	\$66.24	28.46	28.46	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.59	10	\$0.21	17%	50%	\$39.63	1.07	1.07	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	3.52	10	\$0.68	17%	50%	\$21.51	6.39	6.39	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	23.09	23.09	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	3.52	15	\$1.86	17%	50%	\$45.54	7.94	7.94	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	New	32.87	6	\$5.09	26%	45%	\$25.53	35.58	35.58	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	127.25	10	\$44.78	25%	45%	\$39.35	195.30	195.30	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	2.94	10	\$1.37	10%	50%	\$51.91	36.15	36.15	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.64	10	\$0.49	6%	25%	\$33.17	9.54	9.54	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	24.54	12	\$6.00	16%	25%	\$24.16	76.11	76.11	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	6.54	10	\$1.80	16%	36%	\$30.85	28.51	28.51	DRV_SYNBELT-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	New	1,830.26	10	\$227.62	8%	17%	\$13.91	87.78	87.78	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	New	2,678.00	15	\$615.23	8%	17%	\$19.78	141.82	141.82	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	268.67	10	\$604.92	15%	17%	\$251.78	2.06	2.06	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	865.72	1	\$54.66	15%	17%	\$53.24	10.26	10.26	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	335.61	2	\$14.74	15%	17%	\$19.14	0.79	0.79	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	New	199.33	15	\$95.32	15%	15%	\$41.18	6.78	6.78	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.17	15	\$0.67	15%	30%	\$11.17	12.50	12.50	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	4.89	15	\$0.63	8%	16%	\$11.12	4.55	4.55	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	New	7.50	10	\$75.00	15%	15%	\$1,118.30	0.61	0.61	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	3.05	15	\$0.02	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	59.09	15	\$5.64	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	35.88	15	\$6.81	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	35.88	15	\$21.40	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.38	15	\$0.08	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.76	15	\$0.40	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.76	15	\$0.01	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	New	190.25	10	\$44.75	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	197.05	10	\$3.35	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	New	106.61	10	\$11.55	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	New	36.51	10	\$20.71	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	29.24	10	\$6.82	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	29.24	10	\$2.80	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	339.73	10	\$33.39	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	New	0.33	5	\$0.05	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.03	1	\$0.13	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	New	9.70	10	\$8.85	15%	15%	\$14.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Heating	Transformer - High Efficiency	employee	New	19.87	10	\$8.85	15%	15%	\$14.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	0.72	10	\$8.85	15%	15%	\$14.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	2.05	10	\$8.85	15%	15%	\$14.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	0.52	10	\$8.85	15%	15%	\$14.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	New	19.63	10	\$8.85	15%	15%	\$14.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	New	14.62	10	\$8.85	15%	15%	\$14.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	2.37	10	\$8.85	15%	15%	\$14.12	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	New	28.01	3	\$52.82	3%	11%	\$78.25	0.15	0.15	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	New	57.42	3	\$52.82	3%	11%	\$78.25	0.11	0.11	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	New	2.08	3	\$52.82	3%	11%	\$78.25	0.06	0.06	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	5.91	3	\$52.82	3%	11%	\$78.25	0.17	0.17	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	1.52	3	\$52.82	3%	11%	\$78.25	0.04	0.04	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	New	56.70	3	\$52.82	3%	11%	\$78.25	1.68	1.68	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	New	42.24	3	\$52.82	3%	11%	\$78.25	1.25	1.25	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	6.85	3	\$52.82	3%	11%	\$78.25	0.33	0.23	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	New	6.82	3	\$65.07	5%	39%	\$146.84	4.50	4.53	IND_SEM-HVAC-AEG-1

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Agriculture	Exterior Lighting	Commissioning	employee	New	1.75	3	\$65.07	5%	39%	\$146.84	1.16	1.17	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	New	65.43	3	\$65.07	5%	39%	\$146.84	59.18	59.18	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	New	48.74	3	\$65.07	5%	39%	\$146.84	55.10	55.10	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	New	7.91	3	\$65.07	5%	39%	\$146.84	5.40	4.48	IND_SEM-Lighting-AEG-1
Agriculture	Interior Lighting	Retrocommissioning	employee	New	6.82	3	\$41.30	0%	0%	\$93.22	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	1.75	3	\$41.30	0%	0%	\$93.22	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	New	65.43	3	\$41.30	0%	0%	\$93.22	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	New	48.74	3	\$41.30	0%	0%	\$93.22	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	New	7.91	3	\$41.30	0%	0%	\$93.22	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	New	2.40	12	\$1.31	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	39.94	11	\$31.12	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	83.67	85.42	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	59.91	60.18	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	36.14	36.56	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	32.63	33.31	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	2.53	2.55	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	1.53	1.55	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.64	0.65	Building Energy Simulation Tool
Mining	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	39.94	40.12	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	24.09	24.37	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	10.52	10.74	Building Energy Simulation Tool

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Mining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	5.63	5.65	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	3.39	3.43	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	24.91	25.47	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	207.57	212.22	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	100.78	103.04	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	17.86	18.44	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	80.10	82.66	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	Existing	1.09	5	\$0.40	18%	30%	\$72.50	97.60	100.72	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	12.57	12.80	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	397.26	409.35	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	550.97	554.82	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	28.99	30.07	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	155.14	158.38	STAT_WIFI-AII-7PLN-v2-1
Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	111.09	111.57	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	67.00	67.79	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.83	15	\$0.36	7%	33%	\$41.11	1,080.98	1,150.83	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.16	15	\$0.60	7%	33%	\$48.45	1,513.37	1,611.16	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	5.44	6.10	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	210.27	215.64	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	215.31	220.81	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	253.34	266.95	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	369.45	389.29	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	252.55	266.12	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	4,253.89	20	\$1,607.71	15%	20%	\$27.94	151.20	151.20	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$119.57	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Mining	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$83.69	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	Existing	9,901.07	10	\$1,595.84	9%	38%	\$18.02	14,842.56	14,842.56	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	Existing	7,425.80	12	\$2,432.06	9%	38%	\$32.37	10,841.67	10,841.67	PUMP_SYSOPT-Motors-UN-v1.0-5

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Mining	Motors	Pumping System - Variable Speed Drive	employee	Existing	7,425.80	10	\$2,534.93	9%	38%	\$38.18	10,841.67	10,841.67	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	Existing	1,512.66	10	\$167.18	9%	38%	\$12.36	2,267.61	2,267.61	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	Existing	1,787.69	10	\$276.61	9%	38%	\$17.30	2,610.03	2,610.03	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	Existing	2,750.30	10	\$1,394.47	9%	38%	\$56.70	4,015.43	4,015.43	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	7,219.53	10	\$595.78	17%	50%	\$9.23	12,626.48	12,626.48	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	925.78	925.78	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	62.68	62.68	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	8,250.89	10	\$981.26	9%	15%	\$13.30	2,536.06	2,536.06	E3T
Mining	Motors	Compressed Air - System Controls	employee	Existing	1,650.18	10	\$425.98	9%	38%	\$28.87	2,409.26	2,409.26	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	Existing	4,125.45	10	\$428.22	18%	75%	\$11.61	12,368.80	12,368.80	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	3,094.09	15	\$2,616.50	26%	45%	\$72.82	3,011.57	3,011.57	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	103.14	10	\$40.18	17%	50%	\$43.57	180.38	180.38	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	618.82	10	\$130.83	17%	50%	\$23.64	1,082.27	1,082.27	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	3,063.34	3,063.34	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	618.82	15	\$359.77	17%	50%	\$50.06	1,082.27	1,082.27	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Mining	Motors	Compressed Air - End Use Optimization	employee	Existing	5,775.63	6	\$982.45	26%	45%	\$28.07	5,621.61	5,621.61	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,704.05	10	\$1,046.00	25%	45%	\$43.26	2,770.46	2,770.46	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	247.53	10	\$114.90	10%	50%	\$51.91	2,536.06	2,536.06	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	137.51	10	\$40.78	6%	25%	\$33.17	669.24	669.24	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	2,062.72	12	\$504.37	16%	25%	\$24.16	5,019.29	5,019.29	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	Existing	550.06	10	\$151.73	16%	36%	\$30.85	2,886.05	2,886.05	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	8,456.72	10	\$1,156.15	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	12,373.71	15	\$3,124.91	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	74,929.43	10	\$604.92	0%	0%	\$0.90	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	4,000.07	1	\$54.66	0%	0%	\$11.52	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	1,550.67	2	\$14.74	0%	0%	\$4.14	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Mining	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$380.48	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	11.98	15	\$1.71	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	683.14	15	\$97.00	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Mining	Motors	Automatic Milker Takeoffs	Cows	Existing	4,183.28	10	\$45,986.07	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	Existing	579.01	15	\$4.84	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$22.53	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$27.20	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$85.42	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	72.38	15	\$17.42	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	144.75	15	\$84.05	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	144.75	15	\$1.69	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	Existing	4,042.94	10	\$1,045.38	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	4,187.33	10	\$78.29	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	Existing	651.39	10	\$77.55	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Mining	Process	Paper: Premium Control Large Material	employee	Existing	677.71	10	\$384.50	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	Existing	542.82	10	\$126.65	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	Existing	542.82	10	\$51.93	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Mining	Motors	Kraft: Efficient Agitator	employee	Existing	7,219.53	10	\$780.09	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	Existing	6.08	5	\$0.89	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	64.44	1	\$2.98	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	Existing	189.41	10	\$379.40	15%	15%	\$14.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	Existing	408.69	10	\$379.40	15%	15%	\$14.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	Existing	15.49	10	\$379.40	15%	15%	\$14.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	Existing	76.32	10	\$379.40	15%	15%	\$14.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	17.78	10	\$379.40	15%	15%	\$14.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	Existing	2,062.72	10	\$379.40	15%	15%	\$14.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	Existing	162.85	10	\$379.40	15%	15%	\$14.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	Existing	24.52	10	\$379.40	15%	15%	\$14.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	Existing	547.18	3	\$2,264.15	3%	11%	\$79.66	9.37	9.56	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	Existing	1,180.67	3	\$2,264.15	3%	11%	\$79.66	7.05	7.09	IND_SEM-HVAC-AEG-1
Mining	Ventilation	Strategic Energy Management	employee	Existing	44.76	3	\$2,264.15	3%	11%	\$79.66	4.23	4.28	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	Existing	220.49	3	\$2,264.15	3%	11%	\$79.66	18.22	19.45	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	Existing	51.37	3	\$2,264.15	3%	11%	\$79.66	4.61	4.77	IND_SEM-Lighting-AEG-1

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Mining	Motors	Strategic Energy Management	employee	Existing	5,958.97	3	\$2,264.15	3%	11%	\$79.66	578.37	578.37	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	Existing	470.45	3	\$2,264.15	3%	11%	\$79.66	45.66	45.66	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	Existing	70.83	3	\$2,264.15	3%	11%	\$79.66	11.86	9.21	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	Existing	254.41	3	\$4,049.01	0%	0%	\$155.43	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	Existing	59.27	3	\$4,049.01	0%	0%	\$155.43	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	Existing	6,875.74	3	\$4,049.01	0%	0%	\$155.43	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	Existing	542.82	3	\$4,049.01	0%	0%	\$155.43	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	Existing	81.73	3	\$4,049.01	0%	0%	\$155.43	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	Existing	254.41	3	\$2,570.39	10%	40%	\$98.67	315.27	336.66	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	Existing	59.27	3	\$2,570.39	10%	40%	\$98.67	79.81	82.58	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	Existing	6,875.74	3	\$2,570.39	10%	40%	\$98.67	10,010.23	10,010.23	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	Existing	542.82	3	\$2,570.39	10%	40%	\$98.67	790.28	790.28	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	Existing	81.73	3	\$2,570.39	10%	40%	\$98.67	205.19	159.47	IND_RCX-Process-AEG-1
Mining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	1,337.63	12	\$802.26	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	22,277.41	11	\$19,082.31	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Mining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	Existing	598.36	20	\$977.77	0%	14%	\$106.76	1,460.93	1,460.93	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	Existing	78.73	20	\$977.77	0%	14%	\$106.76	115.34	115.34	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	43.49	43.51	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	29.00	29.00	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	17.00	17.00	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	16.96	16.97	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	1.23	1.23	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.72	0.72	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.33	0.33	Building Energy Simulation Tool

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Mining	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	19.33	19.33	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	11.33	11.33	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	5.35	5.36	Building Energy Simulation Tool
Mining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	2.67	2.67	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	1.56	1.56	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	5.18	5.18	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	53.59	53.59	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	26.02	26.02	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	5.15	5.15	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	18.58	18.58	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	New	1.15	5	\$0.40	18%	30%	\$67.52	12.43	12.46	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	3.39	3.39	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	109.06	109.24	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	140.86	140.86	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	1.83	1.84	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	26.60	26.64	STAT_WIFI-All-7PLN-v2-1

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Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	17.74	17.74	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	10.40	10.40	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.70	15	\$0.36	22%	41%	\$44.88	442.92	444.76	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.98	15	\$0.60	22%	41%	\$52.89	620.09	622.66	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	1.08	1.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	48.95	49.46	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	60.17	60.74	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	46.75	47.59	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	37.03	37.71	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	38.83	39.56	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	4,676.23	20	\$1,607.71	15%	20%	\$25.42	53.32	53.32	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$119.57	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Mining	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$83.69	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	New	10,884.08	10	\$1,595.84	9%	38%	\$16.40	3,258.10	3,258.10	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	New	8,163.06	12	\$2,432.06	9%	38%	\$29.44	3,652.66	3,652.66	PUMP_SYSOPT-Motors-UN-v1.0-5
Mining	Motors	Pumping System - Variable Speed Drive	employee	New	8,163.06	10	\$2,534.93	9%	38%	\$34.73	3,433.73	3,433.73	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	New	1,662.84	10	\$167.18	9%	38%	\$11.24	497.77	497.77	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	New	1,965.18	10	\$276.61	9%	38%	\$15.74	826.64	826.64	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	New	3,023.35	10	\$1,394.47	9%	38%	\$51.58	1,271.75	1,271.75	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	New	7,936.30	10	\$595.78	17%	50%	\$8.40	2,771.65	2,771.65	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	325.06	325.06	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	13.76	13.76	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	9,070.06	10	\$981.26	9%	15%	\$12.10	803.21	803.21	E3T
Mining	Motors	Compressed Air - System Controls	employee	New	1,814.01	10	\$425.98	9%	38%	\$26.26	763.05	763.05	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	New	4,535.03	10	\$428.22	18%	75%	\$10.56	2,715.08	2,715.08	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	New	3,401.27	15	\$2,616.50	26%	45%	\$66.24	1,057.42	1,057.42	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	113.38	10	\$40.18	17%	50%	\$39.63	39.59	39.59	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	680.25	10	\$130.83	17%	50%	\$21.51	237.57	237.57	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	857.89	857.89	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	680.25	15	\$359.77	17%	50%	\$45.54	294.95	294.95	CMPAIR_STORAGE-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - End Use Optimization	employee	New	6,349.04	6	\$982.45	26%	45%	\$25.53	1,321.93	1,321.93	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	New	2,972.52	10	\$1,046.00	25%	45%	\$39.35	877.45	877.45	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	New	247.53	10	\$114.90	10%	50%	\$51.91	730.67	730.67	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	New	137.51	10	\$40.78	6%	25%	\$33.17	192.82	192.82	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	New	2,062.72	12	\$504.37	16%	25%	\$24.16	1,538.32	1,538.32	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	New	550.06	10	\$151.73	16%	36%	\$30.85	576.30	576.30	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	New	9,296.32	10	\$1,156.15	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	New	13,602.20	15	\$3,124.91	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	82,368.61	10	\$604.92	0%	0%	\$0.82	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	4,397.21	1	\$54.66	0%	0%	\$10.48	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	1,704.62	2	\$14.74	0%	0%	\$3.77	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Mining	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$380.48	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	750.96	15	\$97.00	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Mining	Motors	Automatic Milker Takeoffs	Cows	New	4,598.61	10	\$45,986.07	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	New	636.50	15	\$4.84	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$22.53	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$27.20	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$85.42	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	79.56	15	\$17.42	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	159.12	15	\$84.05	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	159.12	15	\$1.69	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	New	4,444.33	10	\$1,045.38	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	4,603.06	10	\$78.29	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	New	716.06	10	\$77.55	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Mining	Process	Paper: Premium Control Large Material	employee	New	677.71	10	\$384.50	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	New	542.82	10	\$126.65	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	New	542.82	10	\$51.93	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Mining	Motors	Kraft: Efficient Agitator	employee	New	7,936.30	10	\$780.09	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	New	6.08	5	\$0.89	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	70.84	1	\$2.98	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	New	201.70	10	\$379.40	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	New	413.47	10	\$379.40	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	New	14.99	10	\$379.40	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	New	64.84	10	\$379.40	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	New	16.62	10	\$379.40	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	New	2,062.72	10	\$379.40	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	New	162.85	10	\$379.40	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	New	24.09	10	\$379.40	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	New	582.69	3	\$2,264.15	3%	11%	\$79.29	0.60	0.61	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	New	1,194.46	3	\$2,264.15	3%	11%	\$79.29	0.42	0.42	IND_SEM-HVAC-AEG-1

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Mining	Ventilation	Strategic Energy Management	employee	New	43.29	3	\$2,264.15	3%	11%	\$79.29	0.25	0.25	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	New	187.32	3	\$2,264.15	3%	11%	\$79.29	1.04	1.05	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	New	48.01	3	\$2,264.15	3%	11%	\$79.29	0.27	0.27	IND_SEM-Lighting-AEG-1
Mining	Motors	Strategic Energy Management	employee	New	5,958.97	3	\$2,264.15	3%	11%	\$79.29	33.94	33.94	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	New	470.45	3	\$2,264.15	3%	11%	\$79.29	2.68	2.68	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	New	69.61	3	\$2,264.15	3%	11%	\$79.29	0.64	0.45	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	New	216.14	3	\$4,049.01	10%	40%	\$155.95	24.17	24.34	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	New	55.40	3	\$4,049.01	10%	40%	\$155.95	6.23	6.30	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	New	6,875.74	3	\$4,049.01	10%	40%	\$155.95	1,319.13	1,319.13	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	New	542.82	3	\$4,049.01	10%	40%	\$155.95	62.49	62.49	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	New	80.31	3	\$4,049.01	10%	40%	\$155.95	9.31	7.73	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	New	216.14	3	\$2,570.39	0%	0%	\$99.00	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	New	55.40	3	\$2,570.39	0%	0%	\$99.00	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	New	6,875.74	3	\$2,570.39	0%	0%	\$99.00	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	New	542.82	3	\$2,570.39	0%	0%	\$99.00	0.00	0.00	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	New	80.31	3	\$2,570.39	0%	0%	\$99.00	0.00	0.00	IND_RCX-Process-AEG-1

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Mining	Motors	Municipal Sewage Treatment - Optimization	employee	New	1,470.43	12	\$802.26	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	24,489.17	11	\$19,082.31	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Mining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	New	598.36	20	\$977.77	0%	14%	\$106.76	687.10	687.10	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	New	78.73	20	\$977.77	0%	14%	\$106.76	54.24	54.24	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	24.20	24.70	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	17.33	17.40	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	10.45	10.57	Building Energy Simulation Tool

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Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	9.43	9.63	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	0.73	0.74	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	0.44	0.45	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.19	0.19	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	11.55	11.60	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	6.97	7.05	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	3.04	3.11	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	1.63	1.63	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	0.98	0.99	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	7.20	7.36	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	60.03	61.37	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	29.15	29.80	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	5.17	5.33	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	23.16	23.90	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.32	5	\$0.40	18%	30%	\$245.63	28.22	29.13	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	3.64	3.70	VENT_DCV-Ventilation-7PLN-v5-5

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Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	114.89	118.38	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	159.34	160.45	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	8.38	8.69	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	44.86	45.80	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	32.13	32.27	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	19.38	19.60	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.24	15	\$0.36	7%	33%	\$139.28	506.99	539.75	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.34	15	\$0.60	7%	33%	\$164.15	709.79	755.65	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	2.55	2.86	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	98.62	101.14	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	100.98	103.56	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	118.82	125.20	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	173.28	182.58	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	118.45	124.81	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	7,579.98	20	\$2,864.77	15%	20%	\$27.94	121.18	121.18	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	302.29	15	\$332.94	20%	50%	\$94.84	425.52	425.52	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	483.67	15	\$233.02	20%	50%	\$41.48	680.84	680.84	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,414.37	10	\$227.97	9%	38%	\$18.02	1,907.28	1,907.28	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	1,060.77	12	\$347.42	9%	38%	\$32.37	1,393.16	1,393.16	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,060.77	10	\$362.11	9%	38%	\$38.18	1,393.16	1,393.16	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	1,293.37	10	\$142.95	9%	38%	\$12.36	1,744.11	1,744.11	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	1,528.52	10	\$236.51	9%	38%	\$17.30	2,007.48	2,007.48	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	2,351.57	10	\$1,192.31	9%	38%	\$56.70	3,088.42	3,088.42	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,582.74	10	\$130.61	17%	50%	\$9.23	2,490.04	2,490.04	CMPAIR_EQPT-Motors-7PLN-v5-2
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	182.57	182.57	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	12.36	12.36	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	1,808.84	10	\$215.12	9%	15%	\$13.30	500.13	500.13	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	361.77	10	\$93.39	9%	38%	\$28.87	475.13	475.13	CMPAIR_SYSCtrl-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	904.42	10	\$93.88	18%	75%	\$11.61	2,439.23	2,439.23	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	678.32	15	\$573.62	26%	45%	\$72.82	593.91	593.91	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	22.61	10	\$8.81	17%	50%	\$43.57	35.57	35.57	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	135.66	10	\$28.68	17%	50%	\$23.64	213.43	213.43	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	604.12	604.12	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	135.66	15	\$78.87	17%	50%	\$50.06	213.43	213.43	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	1,266.19	6	\$215.38	26%	45%	\$28.07	1,108.63	1,108.63	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	4,153.98	10	\$1,606.88	25%	45%	\$43.26	3,828.49	3,828.49	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	86.04	10	\$39.94	10%	50%	\$51.91	793.02	793.02	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	47.80	10	\$14.18	6%	25%	\$33.17	209.27	209.27	MTR_GRWND>100HP-Motors-7PLN-v5-25
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	717.03	12	\$175.33	16%	25%	\$24.16	1,569.52	1,569.52	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	191.21	10	\$52.74	16%	36%	\$30.85	902.46	902.46	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	15,068.96	10	\$2,060.14	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	22,048.62	15	\$5,568.25	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	21,407.30	10	\$604.92	0%	0%	\$3.16	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	7,127.70	1	\$54.66	0%	0%	\$6.47	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,763.13	2	\$14.74	0%	0%	\$2.32	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	2,015.30	15	\$1,059.45	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	3.83	15	\$0.55	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	35.05	15	\$4.98	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	597.58	10	\$6,569.10	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	63.67	15	\$0.53	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	597.45	15	\$62.73	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	362.75	15	\$75.73	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	362.75	15	\$237.86	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	7.96	15	\$1.92	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	15.92	15	\$9.24	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	15.92	15	\$0.19	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	6,210.78	10	\$1,605.91	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	6,432.59	10	\$120.27	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,333.81	10	\$158.79	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	442.06	10	\$250.80	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	354.08	10	\$82.62	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	354.08	10	\$33.87	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	11,090.68	10	\$1,198.38	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.96	5	\$0.58	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	99.00	1	\$4.57	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	60.89	10	\$148.94	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	131.39	10	\$148.94	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	4.98	10	\$148.94	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	39.79	10	\$148.94	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	9.27	10	\$148.94	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	717.03	10	\$148.94	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	177.04	10	\$148.94	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	21.84	10	\$148.94	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	175.91	3	\$888.84	3%	11%	\$79.32	20.32	20.74	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	Existing	379.57	3	\$888.84	3%	11%	\$79.32	15.30	15.37	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	14.39	3	\$888.84	3%	11%	\$79.32	9.17	9.28	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	114.96	3	\$888.84	3%	11%	\$79.32	64.07	68.42	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	26.78	3	\$888.84	3%	11%	\$79.32	16.22	16.78	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	Existing	2,071.43	3	\$888.84	3%	11%	\$79.32	1,356.41	1,356.41	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	Existing	511.44	3	\$888.84	3%	11%	\$79.32	334.90	334.90	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	63.10	3	\$888.84	3%	11%	\$79.32	71.26	55.38	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	Existing	132.65	3	\$1,646.98	0%	0%	\$153.05	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	30.90	3	\$1,646.98	0%	0%	\$153.05	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	Existing	2,390.11	3	\$1,646.98	0%	0%	\$153.05	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Process	Commissioning	employee	Existing	590.13	3	\$1,646.98	0%	0%	\$153.05	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	Existing	72.81	3	\$1,646.98	0%	0%	\$153.05	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	132.65	3	\$1,045.53	10%	37%	\$97.16	133.08	142.11	IND_RCX-Motors-AEG-1

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Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	30.90	3	\$1,045.53	10%	37%	\$97.16	33.69	34.86	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	Existing	2,390.11	3	\$1,045.53	10%	37%	\$97.16	2,817.15	2,817.15	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	Existing	590.13	3	\$1,045.53	10%	37%	\$97.16	695.57	695.57	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	72.81	3	\$1,045.53	10%	37%	\$97.16	148.00	115.02	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	191.08	12	\$114.60	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	3,182.32	11	\$2,725.90	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	Existing	340.18	20	\$186.98	0%	18%	\$32.59	880.37	880.37	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	Existing	83.99	20	\$186.98	0%	18%	\$32.59	217.37	217.37	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	12.58	12.58	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	8.39	8.39	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	4.92	4.92	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	4.90	4.91	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.35	0.35	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.21	0.21	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.10	0.10	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	5.59	5.59	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	3.28	3.28	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	1.55	1.55	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	0.77	0.77	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	0.45	0.45	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	1.50	1.50	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	15.50	15.50	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	7.52	7.52	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	1.49	1.49	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	5.37	5.37	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.34	5	\$0.40	18%	30%	\$228.75	3.59	3.60	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	0.98	0.98	VENT_DCV-Ventilation-7PLN-v5-5
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	31.54	31.59	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	40.74	40.74	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	0.53	0.53	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	7.69	7.70	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	5.13	5.13	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	3.01	3.01	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.21	15	\$0.36	22%	41%	\$152.04	207.74	208.60	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.29	15	\$0.60	22%	41%	\$179.19	290.84	292.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.51	0.51	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	22.96	23.20	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	28.22	28.49	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	21.93	22.32	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	17.37	17.69	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	18.21	18.55	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	8,332.54	20	\$2,864.77	15%	20%	\$25.42	42.73	42.73	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	332.31	15	\$332.94	20%	50%	\$86.27	115.97	115.97	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	New	531.69	15	\$233.02	20%	50%	\$37.74	185.55	185.55	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,554.79	10	\$227.97	9%	38%	\$16.40	418.67	418.67	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	New	1,166.09	12	\$347.42	9%	38%	\$29.44	469.37	469.37	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	1,166.09	10	\$362.11	9%	38%	\$34.73	441.24	441.24	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	1,421.77	10	\$142.95	9%	38%	\$11.24	382.85	382.85	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	1,680.28	10	\$236.51	9%	38%	\$15.74	635.80	635.80	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	2,585.05	10	\$1,192.31	9%	38%	\$51.58	978.15	978.15	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,739.87	10	\$130.61	17%	50%	\$8.40	546.59	546.59	CMPAIR_EQPT-Motors-7PLN-v5-2

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Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	64.10	64.10	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	2.71	2.71	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	1,988.43	10	\$215.12	9%	15%	\$12.10	158.40	158.40	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	New	397.69	10	\$93.39	9%	38%	\$26.26	150.48	150.48	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	994.21	10	\$93.88	18%	75%	\$10.56	535.44	535.44	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	745.66	15	\$573.62	26%	45%	\$66.24	208.53	208.53	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	24.86	10	\$8.81	17%	50%	\$39.63	7.81	7.81	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	149.13	10	\$28.68	17%	50%	\$21.51	46.85	46.85	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	169.18	169.18	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	149.13	15	\$78.87	17%	50%	\$45.54	58.17	58.17	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	New	1,391.90	6	\$215.38	26%	45%	\$25.53	260.70	260.70	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	4,566.39	10	\$1,606.88	25%	45%	\$39.35	1,212.54	1,212.54	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	86.04	10	\$39.94	10%	50%	\$51.91	228.48	228.48	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	47.80	10	\$14.18	6%	25%	\$33.17	60.29	60.29	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	717.03	12	\$175.33	16%	25%	\$24.16	481.03	481.03	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	191.21	10	\$52.74	16%	36%	\$30.85	180.21	180.21	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	16,565.04	10	\$2,060.14	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	24,237.66	15	\$5,568.25	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	23,532.66	10	\$604.92	0%	0%	\$2.87	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	7,835.35	1	\$54.66	0%	0%	\$5.88	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	3,037.46	2	\$14.74	0%	0%	\$2.11	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	2,215.38	15	\$1,059.45	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	4.21	15	\$0.55	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	38.53	15	\$4.98	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	New	656.91	10	\$6,569.10	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	69.99	15	\$0.53	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	656.77	15	\$62.73	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	398.77	15	\$75.73	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	398.77	15	\$237.86	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	8.75	15	\$1.92	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	17.50	15	\$9.24	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	17.50	15	\$0.19	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASPER-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	6,827.40	10	\$1,605.91	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	7,071.24	10	\$120.27	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	New	1,466.23	10	\$158.79	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	442.06	10	\$250.80	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	354.08	10	\$82.62	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	354.08	10	\$33.87	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	12,191.79	10	\$1,198.38	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	3.96	5	\$0.58	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPROCESS-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	108.83	1	\$4.57	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	64.84	10	\$148.94	15%	15%	\$14.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	New	132.92	10	\$148.94	15%	15%	\$14.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	4.82	10	\$148.94	15%	15%	\$14.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	33.81	10	\$148.94	15%	15%	\$14.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	8.66	10	\$148.94	15%	15%	\$14.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Motors	Transformer - High Efficiency	employee	New	717.03	10	\$148.94	15%	15%	\$14.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	New	177.04	10	\$148.94	15%	15%	\$14.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	21.47	10	\$148.94	15%	15%	\$14.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	New	187.33	3	\$888.84	3%	11%	\$79.17	1.31	1.31	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	New	384.00	3	\$888.84	3%	11%	\$79.17	0.92	0.92	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	New	13.92	3	\$888.84	3%	11%	\$79.17	0.53	0.53	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	97.67	3	\$888.84	3%	11%	\$79.17	3.65	3.69	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	25.03	3	\$888.84	3%	11%	\$79.17	0.94	0.96	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	New	2,071.43	3	\$888.84	3%	11%	\$79.17	79.60	79.60	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	New	511.44	3	\$888.84	3%	11%	\$79.17	19.65	19.65	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	62.02	3	\$888.84	3%	11%	\$79.17	3.87	2.72	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	New	112.69	3	\$1,646.98	10%	37%	\$153.80	10.20	10.27	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	New	28.88	3	\$1,646.98	10%	37%	\$153.80	2.63	2.66	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	New	2,390.11	3	\$1,646.98	10%	37%	\$153.80	371.23	371.23	IND_SEM-HVAC-AEG-1

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Food Mfg	Process	Commissioning	employee	New	590.13	3	\$1,646.98	10%	37%	\$153.80	91.66	91.66	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	New	71.56	3	\$1,646.98	10%	37%	\$153.80	6.72	5.57	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	112.69	3	\$1,045.53	0%	0%	\$97.64	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	28.88	3	\$1,045.53	0%	0%	\$97.64	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	New	2,390.11	3	\$1,045.53	0%	0%	\$97.64	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	New	590.13	3	\$1,045.53	0%	0%	\$97.64	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	71.56	3	\$1,045.53	0%	0%	\$97.64	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	210.05	12	\$114.60	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	3,498.27	11	\$2,725.90	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	New	340.18	20	\$186.98	0%	18%	\$32.59	527.70	527.70	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	New	83.99	20	\$186.98	0%	18%	\$32.59	130.29	130.29	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	7.14	7.29	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	5.11	5.14	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	3.08	3.12	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	2.78	2.84	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	0.22	0.22	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	0.13	0.13	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.05	0.06	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	3.41	3.42	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	2.06	2.08	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	0.90	0.92	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	0.48	0.48	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	0.29	0.29	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	2.13	2.17	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	17.71	18.11	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	8.60	8.79	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	1.52	1.57	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	6.84	7.05	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.02	5	\$0.40	18%	30%	\$4,291.19	8.33	8.60	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	1.07	1.09	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	33.90	34.93	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	47.02	47.35	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	2.47	2.57	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	13.24	13.52	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	9.48	9.52	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	5.72	5.78	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.01	15	\$0.36	7%	33%	\$2,433.20	200.76	213.73	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.02	15	\$0.60	7%	33%	\$2,867.71	281.06	299.22	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	1.01	1.13	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	39.05	40.05	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	39.99	41.01	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	47.05	49.58	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	68.62	72.30	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	46.91	49.43	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	17,818.2 ₂	20	\$6,734.19	15%	20%	\$27.94	47.48	47.48	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	16.49	15	\$18.16	20%	50%	\$94.84	17.41	17.41	RFG_FHPC-Refrigeration-RTF-v1.3-23
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	26.39	15	\$12.71	20%	50%	\$41.48	27.86	27.86	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,553.44	10	\$250.38	9%	38%	\$18.02	1,571.12	1,571.12	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	1,165.08	12	\$381.58	9%	38%	\$32.37	1,147.61	1,147.61	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,165.08	10	\$397.72	9%	38%	\$38.18	1,147.61	1,147.61	PUMP_VSD-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	825.94	10	\$91.28	9%	38%	\$12.36	835.33	835.33	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	976.11	10	\$151.03	9%	38%	\$17.30	961.47	961.47	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	1,501.70	10	\$761.40	9%	38%	\$56.70	1,479.19	1,479.19	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,476.71	10	\$121.86	17%	50%	\$9.23	1,742.43	1,742.43	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	127.76	127.76	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	8.65	8.65	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	1,687.67	10	\$200.71	9%	15%	\$13.30	349.97	349.97	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	337.53	10	\$87.13	9%	38%	\$28.87	332.47	332.47	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	843.84	10	\$87.59	18%	75%	\$11.61	1,706.87	1,706.87	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	632.88	15	\$535.19	26%	45%	\$72.82	415.59	415.59	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	21.10	10	\$8.22	17%	50%	\$43.57	24.89	24.89	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	126.58	10	\$26.76	17%	50%	\$23.64	149.35	149.35	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	422.74	422.74	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	126.58	15	\$73.59	17%	50%	\$50.06	149.35	149.35	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	1,181.37	6	\$200.95	26%	45%	\$28.07	775.77	775.77	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	3,353.29	10	\$1,297.15	25%	45%	\$43.26	2,317.91	2,317.91	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	68.17	10	\$31.65	10%	50%	\$51.91	471.25	471.25	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	37.87	10	\$11.23	6%	25%	\$33.17	124.36	124.36	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	568.12	12	\$138.91	16%	25%	\$24.16	932.68	932.68	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	151.50	10	\$41.79	16%	36%	\$30.85	536.28	536.28	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	35,422.53	10	\$4,842.77	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	51,829.57	15	\$13,089.26	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	105,805.50	10	\$604.92	0%	0%	\$0.64	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	16,755.04	1	\$54.66	0%	0%	\$2.75	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	6,495.27	2	\$14.74	0%	0%	\$0.99	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	109.94	15	\$57.80	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	36.70	15	\$5.23	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	705.61	15	\$100.19	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	656.34	10	\$7,215.05	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	146.58	15	\$1.23	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	32.59	15	\$3.42	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	19.79	15	\$4.13	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	19.79	15	\$12.98	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	18.32	15	\$4.41	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	36.64	15	\$21.28	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	36.64	15	\$0.43	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	5,013.65	10	\$1,296.37	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	5,192.71	10	\$97.09	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	500.45	10	\$59.58	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	95.65	10	\$54.26	15%	40%	\$63.45	391.44	391.44	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	76.61	10	\$17.87	15%	29%	\$26.09	178.71	178.71	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	76.61	10	\$7.33	15%	25%	\$10.70	119.14	119.14	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	8,952.94	10	\$967.39	15%	29%	\$12.08	4,177.06	4,177.06	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.86	5	\$0.13	15%	38%	\$28.06	3.27	3.27	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	79.92	1	\$3.69	15%	52%	\$38.94	96.16	96.16	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	23.96	10	\$92.43	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	51.69	10	\$92.43	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.96	10	\$92.43	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	21.01	10	\$92.43	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.89	10	\$92.43	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	568.12	10	\$92.43	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	38.30	10	\$92.43	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	11.41	10	\$92.43	15%	15%	\$14.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	69.21	3	\$551.60	3%	11%	\$79.30	8.39	8.57	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	149.34	3	\$551.60	3%	11%	\$79.30	6.32	6.35	IND_SEM-HVAC-AEG-1
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	5.66	3	\$551.60	3%	11%	\$79.30	3.79	3.83	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	60.70	3	\$551.60	3%	11%	\$79.30	35.52	37.93	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	14.14	3	\$551.60	3%	11%	\$79.30	8.99	9.30	IND_SEM-Lighting-AEG-1

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Paper Mfg	Motors	Strategic Energy Management	employee	Existing	1,641.24	3	\$551.60	3%	11%	\$79.30	1,128.45	1,128.45	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	Existing	110.66	3	\$551.60	3%	11%	\$79.30	76.08	76.08	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	32.96	3	\$551.60	3%	11%	\$79.30	39.09	30.38	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	70.04	3	\$1,103.76	0%	0%	\$153.88	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	16.32	3	\$1,103.76	0%	0%	\$153.88	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	Existing	1,893.74	3	\$1,103.76	0%	0%	\$153.88	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	Existing	127.68	3	\$1,103.76	0%	0%	\$153.88	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	38.04	3	\$1,103.76	0%	0%	\$153.88	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	70.04	3	\$700.69	10%	35%	\$97.69	48.80	52.11	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	16.32	3	\$700.69	10%	35%	\$97.69	12.35	12.78	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	Existing	1,893.74	3	\$700.69	10%	35%	\$97.69	1,550.07	1,550.07	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	Existing	127.68	3	\$700.69	10%	35%	\$97.69	104.51	104.51	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	38.04	3	\$700.69	10%	35%	\$97.69	53.69	41.73	IND_RCX-Process-AEG-1
Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	209.87	12	\$125.87	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	3,495.25	11	\$2,993.95	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	Existing	141.54	20	\$77.80	0%	80%	\$38.07	1,251.72	1,251.72	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	Existing	9.54	20	\$77.80	0%	80%	\$38.07	84.39	84.39	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	3.71	3.71	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	2.47	2.47	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	1.45	1.45	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	1.45	1.45	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.10	0.10	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.06	0.06	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.03	0.03	Building Energy Simulation Tool

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Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	1.65	1.65	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	0.97	0.97	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	0.46	0.46	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	0.23	0.23	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	0.13	0.13	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	0.44	0.44	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	4.57	4.57	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	2.22	2.22	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	0.44	0.44	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	1.59	1.59	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.02	5	\$0.40	18%	30%	\$3,996.39	1.06	1.06	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	0.29	0.29	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	9.31	9.32	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	12.02	12.02	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	0.16	0.16	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	2.27	2.27	STAT_WIFI-All-7PLN-v2-1

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Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	1.51	1.51	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	0.89	0.89	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.01	15	\$0.36	22%	41%	\$2,656.18	82.27	82.61	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.02	15	\$0.60	22%	41%	\$3,130.50	115.18	115.65	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.20	0.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	9.09	9.19	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	11.17	11.28	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	8.68	8.84	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	6.88	7.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	7.21	7.35	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	19,587.26	20	\$6,734.19	15%	20%	\$25.42	16.74	16.74	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	18.13	15	\$18.16	20%	50%	\$86.27	4.74	4.74	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Paper Mfg	Process	Refrigeration - System Optimization	employee	New	29.01	15	\$12.71	20%	50%	\$37.74	7.59	7.59	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	1,707.67	10	\$250.38	9%	38%	\$16.40	344.88	344.88	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	1,280.76	12	\$381.58	9%	38%	\$29.44	386.64	386.64	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	1,280.76	10	\$397.72	9%	38%	\$34.73	363.47	363.47	PUMP_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	907.94	10	\$91.28	9%	38%	\$11.24	183.36	183.36	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	1,073.02	10	\$151.03	9%	38%	\$15.74	304.51	304.51	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	1,650.79	10	\$761.40	9%	38%	\$51.58	468.48	468.48	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	1,623.32	10	\$121.86	17%	50%	\$8.40	382.48	382.48	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	44.86	44.86	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	1.90	1.90	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	1,855.23	10	\$200.71	9%	15%	\$12.10	110.84	110.84	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	371.05	10	\$87.13	9%	38%	\$26.26	105.30	105.30	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	927.61	10	\$87.59	18%	75%	\$10.56	374.68	374.68	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	695.71	15	\$535.19	26%	45%	\$66.24	145.92	145.92	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	23.19	10	\$8.22	17%	50%	\$39.63	5.46	5.46	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	139.14	10	\$26.76	17%	50%	\$21.51	32.78	32.78	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	118.39	118.39	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	139.14	15	\$73.59	17%	50%	\$45.54	40.70	40.70	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	New	1,298.66	6	\$200.95	26%	45%	\$25.53	182.42	182.42	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	3,686.22	10	\$1,297.15	25%	45%	\$39.35	734.12	734.12	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	68.17	10	\$31.65	10%	50%	\$51.91	135.77	135.77	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	37.87	10	\$11.23	6%	25%	\$33.17	35.83	35.83	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	568.12	12	\$138.91	16%	25%	\$24.16	285.85	285.85	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	151.50	10	\$41.79	16%	36%	\$30.85	107.09	107.09	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	38,939.36	10	\$4,842.77	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	56,975.34	15	\$13,089.26	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	116,310.13	10	\$604.92	0%	0%	\$0.58	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	18,418.52	1	\$54.66	0%	0%	\$2.50	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	7,140.13	2	\$14.74	0%	0%	\$0.90	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	120.85	15	\$57.80	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	40.34	15	\$5.23	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	775.66	15	\$100.19	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	New	721.51	10	\$7,215.05	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	161.13	15	\$1.23	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	35.83	15	\$3.42	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	21.75	15	\$4.13	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	21.75	15	\$12.98	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	20.14	15	\$4.41	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	40.28	15	\$21.28	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	40.28	15	\$0.43	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	5,511.42	10	\$1,296.37	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	5,708.25	10	\$97.09	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	550.13	10	\$59.58	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	95.65	10	\$54.26	15%	40%	\$63.45	131.42	131.42	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	76.61	10	\$17.87	15%	29%	\$26.09	60.00	60.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	76.61	10	\$7.33	15%	25%	\$10.70	40.00	40.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	9,841.81	10	\$967.39	15%	29%	\$10.99	1,541.59	1,541.59	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	0.86	5	\$0.13	15%	38%	\$28.06	0.51	0.51	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	87.85	1	\$3.69	15%	52%	\$35.42	49.72	49.72	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	25.51	10	\$92.43	15%	15%	\$14.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	52.30	10	\$92.43	15%	15%	\$14.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.90	10	\$92.43	15%	15%	\$14.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	17.85	10	\$92.43	15%	15%	\$14.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	4.58	10	\$92.43	15%	15%	\$14.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	568.12	10	\$92.43	15%	15%	\$14.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	New	38.30	10	\$92.43	15%	15%	\$14.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	11.21	10	\$92.43	15%	15%	\$14.30	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	New	73.70	3	\$551.60	3%	11%	\$79.28	0.54	0.54	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	New	151.08	3	\$551.60	3%	11%	\$79.28	0.38	0.38	IND_SEM-HVAC-AEG-1

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Paper Mfg	Ventilation	Strategic Energy Management	employee	New	5.48	3	\$551.60	3%	11%	\$79.28	0.22	0.22	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	51.57	3	\$551.60	3%	11%	\$79.28	2.02	2.04	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	13.22	3	\$551.60	3%	11%	\$79.28	0.52	0.53	IND_SEM-Lighting-AEG-1
Paper Mfg	Motors	Strategic Energy Management	employee	New	1,641.24	3	\$551.60	3%	11%	\$79.28	66.22	66.22	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	New	110.66	3	\$551.60	3%	11%	\$79.28	4.46	4.46	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	32.40	3	\$551.60	3%	11%	\$79.28	2.13	1.49	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	New	59.50	3	\$1,103.76	10%	35%	\$154.48	3.74	3.77	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	New	15.25	3	\$1,103.76	10%	35%	\$154.48	0.96	0.98	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	New	1,893.74	3	\$1,103.76	10%	35%	\$154.48	204.25	204.25	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	New	127.68	3	\$1,103.76	10%	35%	\$154.48	13.77	13.77	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	New	37.38	3	\$1,103.76	10%	35%	\$154.48	2.44	2.02	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	59.50	3	\$700.69	0%	0%	\$98.07	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	15.25	3	\$700.69	0%	0%	\$98.07	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	New	1,893.74	3	\$700.69	0%	0%	\$98.07	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	New	127.68	3	\$700.69	0%	0%	\$98.07	0.00	0.00	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	37.38	3	\$700.69	0%	0%	\$98.07	0.00	0.00	IND_RCX-Process-AEG-1

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Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	230.71	12	\$125.87	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	3,842.27	11	\$2,993.95	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	New	141.54	20	\$77.80	0%	80%	\$38.07	750.29	750.29	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	New	9.54	20	\$77.80	0%	80%	\$38.07	50.59	50.59	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	31.90	32.56	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	22.84	22.94	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	13.78	13.94	Building Energy Simulation Tool

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Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	12.44	12.70	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	0.97	0.97	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	0.58	0.59	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.24	0.25	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	15.23	15.29	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	9.18	9.29	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	4.01	4.09	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	2.15	2.15	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	1.29	1.31	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	9.50	9.71	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	79.13	80.90	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	38.42	39.28	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	6.81	7.03	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	30.54	31.51	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	6.66	5	\$0.40	18%	30%	\$11.83	37.20	38.40	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	4.79	4.88	VENT_DCV-Ventilation-7PLN-v5-5

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Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	151.44	156.05	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	210.03	211.50	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	11.05	11.46	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	59.14	60.37	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	42.35	42.53	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	25.54	25.84	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	5.06	15	\$0.36	7%	33%	\$6.71	212.58	226.32	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	7.09	15	\$0.60	7%	33%	\$7.90	297.61	316.85	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	1.07	1.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	41.36	42.42	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	42.35	43.43	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	49.83	52.51	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	72.67	76.57	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	49.68	52.34	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	12,595.30	20	\$4,760.25	15%	20%	\$27.94	60.41	60.41	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	301.00	15	\$331.51	20%	50%	\$94.84	158.89	158.89	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	481.60	15	\$232.02	20%	50%	\$41.48	254.22	254.22	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	14,997.87	10	\$2,417.33	9%	38%	\$18.02	7,584.25	7,584.25	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	11,248.40	12	\$3,684.02	9%	38%	\$32.37	5,539.88	5,539.88	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	11,248.40	10	\$3,839.84	9%	38%	\$38.18	5,539.88	5,539.88	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	1,352.27	10	\$149.46	9%	38%	\$12.36	683.83	683.83	FAN_EQPTF-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	1,598.13	10	\$247.28	9%	38%	\$17.30	787.09	787.09	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	2,458.67	10	\$1,246.61	9%	38%	\$56.70	1,210.90	1,210.90	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	6,884.27	10	\$568.11	17%	50%	\$9.23	4,061.51	4,061.51	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	297.79	297.79	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	20.16	20.16	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

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Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	7,867.73	10	\$935.70	9%	15%	\$13.30	815.77	815.77	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	1,573.55	10	\$406.20	9%	38%	\$28.87	774.98	774.98	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	3,933.87	10	\$408.33	18%	75%	\$11.61	3,978.62	3,978.62	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	2,950.40	15	\$2,495.00	26%	45%	\$72.82	968.72	968.72	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	98.35	10	\$38.31	17%	50%	\$43.57	58.02	58.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	590.08	10	\$124.75	17%	50%	\$23.64	348.13	348.13	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	985.37	985.37	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	590.08	15	\$343.06	17%	50%	\$50.06	348.13	348.13	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	Existing	5,507.41	6	\$936.83	26%	45%	\$28.07	1,808.28	1,808.28	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	3,299.84	10	\$1,276.47	25%	45%	\$43.26	1,140.48	1,140.48	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	236.63	10	\$109.84	10%	50%	\$51.91	817.83	817.83	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	131.46	10	\$38.99	6%	25%	\$33.17	215.82	215.82	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,971.90	12	\$482.16	16%	25%	\$24.16	1,618.62	1,618.62	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	525.84	10	\$145.05	16%	36%	\$30.85	930.69	930.69	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	25,039.39	10	\$3,423.25	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	36,637.17	15	\$9,252.50	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	283,752.52	10	\$604.92	0%	0%	\$0.24	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	11,843.76	1	\$54.66	0%	0%	\$3.89	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	4,591.36	2	\$14.74	0%	0%	\$1.40	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	2,006.66	15	\$1,054.90	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	5.12	15	\$0.73	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	373.23	15	\$53.00	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	Existing	6,336.72	10	\$69,658.42	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	64.60	15	\$0.54	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	594.89	15	\$62.47	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	361.20	15	\$75.40	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	361.20	15	\$236.84	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	8.08	15	\$1.94	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	16.15	15	\$9.38	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	16.15	15	\$0.19	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	4,933.73	10	\$1,275.71	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	5,109.93	10	\$95.54	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	2,962.23	10	\$352.65	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	599.07	10	\$339.88	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	479.84	10	\$111.96	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	479.84	10	\$45.90	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	8,810.22	10	\$951.97	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	5.37	5	\$0.79	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	78.64	1	\$3.63	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	214.04	10	\$383.20	15%	15%	\$14.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	461.85	10	\$383.20	15%	15%	\$14.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	17.51	10	\$383.20	15%	15%	\$14.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	44.50	10	\$383.20	15%	15%	\$14.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	10.37	10	\$383.20	15%	15%	\$14.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	1,971.90	10	\$383.20	15%	15%	\$14.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	239.92	10	\$383.20	15%	15%	\$14.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	29.04	10	\$383.20	15%	15%	\$14.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	618.35	3	\$2,286.79	3%	11%	\$79.50	3.57	3.65	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	1,334.23	3	\$2,286.79	3%	11%	\$79.50	2.69	2.70	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	50.58	3	\$2,286.79	3%	11%	\$79.50	1.61	1.63	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	128.56	3	\$2,286.79	3%	11%	\$79.50	3.58	3.83	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	29.95	3	\$2,286.79	3%	11%	\$79.50	0.91	0.94	IND_SEM-Lighting-AEG-1
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	5,696.61	3	\$2,286.79	3%	11%	\$79.50	186.51	186.51	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	693.10	3	\$2,286.79	3%	11%	\$79.50	22.69	22.69	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	83.89	3	\$2,286.79	3%	11%	\$79.50	4.74	3.68	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	148.34	3	\$3,954.06	0%	0%	\$154.65	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	34.56	3	\$3,954.06	0%	0%	\$154.65	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	Existing	6,573.01	3	\$3,954.06	0%	0%	\$154.65	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	Existing	799.73	3	\$3,954.06	0%	0%	\$154.65	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	96.79	3	\$3,954.06	0%	0%	\$154.65	0.00	0.00	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	148.34	3	\$2,510.12	5%	39%	\$98.17	70.28	75.05	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	34.56	3	\$2,510.12	5%	39%	\$98.17	17.79	18.41	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	6,573.01	3	\$2,510.12	5%	39%	\$98.17	3,658.50	3,658.50	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	Existing	799.73	3	\$2,510.12	5%	39%	\$98.17	445.13	445.13	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	96.79	3	\$2,510.12	5%	39%	\$98.17	92.91	72.20	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	2,026.20	12	\$1,215.24	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	33,745.20	11	\$28,905.36	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	Existing	2,282.04	20	\$1,254.30	0%	100%	\$36.23	12,604.31	12,604.31	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	Existing	277.65	20	\$1,254.30	0%	100%	\$36.23	1,533.55	1,533.55	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	Existing	2,230.97	20	\$919.67	0%	97%	\$27.17	12,579.42	12,579.42	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	Existing	271.44	20	\$919.67	0%	97%	\$27.17	1,530.52	1,530.52	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Petroleum Refining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	16.58	16.59	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	11.05	11.05	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	6.48	6.48	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	6.46	6.47	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.47	0.47	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.27	0.27	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.13	0.13	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	7.37	7.37	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	4.32	4.32	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	2.04	2.04	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	1.02	1.02	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	0.60	0.60	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	1.97	1.97	AEG-BEST

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Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	20.43	20.43	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	9.92	9.92	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	1.96	1.96	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	7.08	7.08	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	7.06	5	\$0.40	18%	30%	\$11.01	4.74	4.75	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	1.29	1.29	VENT_DCV-Ventilation-7PLN-v5-5
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	41.57	41.64	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	53.70	53.70	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	0.70	0.70	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	10.14	10.16	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	6.76	6.76	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	3.96	3.96	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	4.27	15	\$0.36	22%	41%	\$7.32	87.14	87.50	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	5.98	15	\$0.60	22%	41%	\$8.63	122.00	122.50	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.21	0.21	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	9.63	9.73	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	11.83	11.95	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	9.20	9.36	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	7.28	7.42	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	7.64	7.78	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	13,845.79	20	\$4,760.25	15%	20%	\$25.42	21.30	21.30	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	330.88	15	\$331.51	20%	50%	\$86.27	43.30	43.30	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	529.41	15	\$232.02	20%	50%	\$37.74	69.28	69.28	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	16,486.89	10	\$2,417.33	9%	38%	\$16.40	1,664.82	1,664.82	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	12,365.17	12	\$3,684.02	9%	38%	\$29.44	1,866.44	1,866.44	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	12,365.17	10	\$3,839.84	9%	38%	\$34.73	1,754.57	1,754.57	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	1,486.52	10	\$149.46	9%	38%	\$11.24	150.11	150.11	FAN_EQPTF-Motors-UN-v1.0-5

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Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	1,756.80	10	\$247.28	9%	38%	\$15.74	249.28	249.28	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	2,702.77	10	\$1,246.61	9%	38%	\$51.58	383.51	383.51	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	7,567.75	10	\$568.11	17%	50%	\$8.40	891.55	891.55	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	104.56	104.56	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	4.43	4.43	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	8,648.86	10	\$935.70	9%	15%	\$12.10	258.37	258.37	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	1,729.77	10	\$406.20	9%	38%	\$26.26	245.45	245.45	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	4,324.43	10	\$408.33	18%	75%	\$10.56	873.35	873.35	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	3,243.32	15	\$2,495.00	26%	45%	\$66.24	340.14	340.14	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	108.11	10	\$38.31	17%	50%	\$39.63	12.74	12.74	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	648.66	10	\$124.75	17%	50%	\$21.51	76.42	76.42	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	275.95	275.95	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	648.66	15	\$343.06	17%	50%	\$45.54	94.87	94.87	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	New	6,054.20	6	\$936.83	26%	45%	\$25.53	425.22	425.22	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	3,627.46	10	\$1,276.47	25%	45%	\$39.35	361.21	361.21	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	236.63	10	\$109.84	10%	50%	\$51.91	235.63	235.63	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	131.46	10	\$38.99	6%	25%	\$33.17	62.18	62.18	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,971.90	12	\$482.16	16%	25%	\$24.16	496.08	496.08	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	525.84	10	\$145.05	16%	36%	\$30.85	185.85	185.85	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	New	27,525.37	10	\$3,423.25	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	New	40,274.60	15	\$9,252.50	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	311,924.18	10	\$604.92	0%	0%	\$0.22	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	13,019.64	1	\$54.66	0%	0%	\$3.54	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	5,047.20	2	\$14.74	0%	0%	\$1.27	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	2,205.88	15	\$1,054.90	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.62	15	\$0.73	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	410.29	15	\$53.00	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	New	6,965.84	10	\$69,658.42	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	71.02	15	\$0.54	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	653.95	15	\$62.47	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	397.06	15	\$75.40	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	397.06	15	\$236.84	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	8.88	15	\$1.94	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	17.75	15	\$9.38	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	17.75	15	\$0.19	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	5,423.56	10	\$1,275.71	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	5,617.26	10	\$95.54	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	3,256.33	10	\$352.65	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	599.07	10	\$339.88	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	479.84	10	\$111.96	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	479.84	10	\$45.90	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	9,684.92	10	\$951.97	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	5.37	5	\$0.79	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	86.45	1	\$3.63	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	227.94	10	\$383.20	15%	15%	\$14.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	467.24	10	\$383.20	15%	15%	\$14.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	16.94	10	\$383.20	15%	15%	\$14.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	37.81	10	\$383.20	15%	15%	\$14.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	9.69	10	\$383.20	15%	15%	\$14.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	1,971.90	10	\$383.20	15%	15%	\$14.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	239.92	10	\$383.20	15%	15%	\$14.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	28.54	10	\$383.20	15%	15%	\$14.25	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	658.48	3	\$2,286.79	3%	11%	\$79.00	0.23	0.23	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	New	1,349.82	3	\$2,286.79	3%	11%	\$79.00	0.16	0.16	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	48.92	3	\$2,286.79	3%	11%	\$79.00	0.09	0.09	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	109.23	3	\$2,286.79	3%	11%	\$79.00	0.20	0.21	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	27.99	3	\$2,286.79	3%	11%	\$79.00	0.05	0.05	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Motors	Strategic Energy Management	employee	New	5,696.61	3	\$2,286.79	3%	11%	\$79.00	10.94	10.94	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	New	693.10	3	\$2,286.79	3%	11%	\$79.00	1.33	1.33	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	82.44	3	\$2,286.79	3%	11%	\$79.00	0.26	0.18	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	New	126.03	3	\$3,954.06	5%	39%	\$155.03	5.39	5.42	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	32.30	3	\$3,954.06	5%	39%	\$155.03	1.39	1.41	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	New	6,573.01	3	\$3,954.06	5%	39%	\$155.03	482.01	482.01	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	New	799.73	3	\$3,954.06	5%	39%	\$155.03	58.65	58.65	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	New	95.12	3	\$3,954.06	5%	39%	\$155.03	4.22	3.50	IND_SEM-Lighting-AEG-1
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	126.03	3	\$2,510.12	0%	0%	\$98.42	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	32.30	3	\$2,510.12	0%	0%	\$98.42	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	New	6,573.01	3	\$2,510.12	0%	0%	\$98.42	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	New	799.73	3	\$2,510.12	0%	0%	\$98.42	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	95.12	3	\$2,510.12	0%	0%	\$98.42	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	New	2,227.37	12	\$1,215.24	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1

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Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	37,095.51	11	\$28,905.36	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	New	2,282.04	20	\$1,254.30	0%	100%	\$36.23	7,555.05	7,555.05	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	New	277.65	20	\$1,254.30	0%	100%	\$36.23	919.21	919.21	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	New	2,230.97	20	\$919.67	0%	97%	\$27.17	5,637.28	5,637.28	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	New	271.44	20	\$919.67	0%	97%	\$27.17	685.88	685.88	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	39.18	40.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	28.06	28.18	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	16.92	17.12	Building Energy Simulation Tool

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Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	15.28	15.60	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	1.19	1.19	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	0.72	0.72	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.30	0.31	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	18.70	18.79	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	11.28	11.41	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	4.93	5.03	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	2.64	2.65	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	1.59	1.61	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	11.66	11.93	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	97.20	99.37	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	47.19	48.25	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	8.37	8.63	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	37.51	38.71	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	3.69	5	\$0.40	18%	30%	\$21.32	45.70	47.16	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	5.89	5.99	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	186.02	191.68	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	257.99	259.80	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	13.58	14.08	RTU_MNT-Cooling-PGE-R2-1
Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	72.64	74.16	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	52.02	52.25	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	31.37	31.74	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	2.81	15	\$0.36	7%	33%	\$12.09	319.60	340.26	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	3.93	15	\$0.60	7%	33%	\$14.25	447.45	476.36	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	1.61	1.80	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	62.18	63.77	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	63.67	65.30	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	74.92	78.94	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	109.26	115.12	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	74.69	78.70	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	11,197.58	20	\$4,232.00	15%	20%	\$27.94	127.70	127.70	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	110.16	15	\$121.33	20%	50%	\$94.84	55.31	55.31	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	176.26	15	\$84.92	20%	50%	\$41.48	88.49	88.49	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,560.29	10	\$251.48	9%	38%	\$18.02	750.44	750.44	PUMP_EQPT-Motors-7PLN-v5-1

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Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	1,170.21	12	\$383.26	9%	38%	\$32.37	548.16	548.16	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,170.21	10	\$399.47	9%	38%	\$38.18	548.16	548.16	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	1,207.65	10	\$133.47	9%	38%	\$12.36	580.84	580.84	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	1,427.22	10	\$220.84	9%	38%	\$17.30	668.55	668.55	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	2,195.73	10	\$1,113.29	9%	38%	\$56.70	1,028.54	1,028.54	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	691.66	10	\$57.08	17%	50%	\$9.23	388.11	388.11	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	28.46	28.46	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	1.93	1.93	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	790.46	10	\$94.01	9%	15%	\$13.30	77.95	77.95	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	158.09	10	\$40.81	9%	38%	\$28.87	74.05	74.05	CMPAIR_SYSCRTL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	395.23	10	\$41.02	18%	75%	\$11.61	380.19	380.19	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	296.42	15	\$250.67	26%	45%	\$72.82	92.57	92.57	CMPAIR_VSD-Motors-UN-v1.0-3

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Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	9.88	10	\$3.85	17%	50%	\$43.57	5.54	5.54	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	59.28	10	\$12.53	17%	50%	\$23.64	33.27	33.27	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	94.16	94.16	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	59.28	15	\$34.47	17%	50%	\$50.06	33.27	33.27	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	Existing	553.32	6	\$94.12	26%	45%	\$28.07	172.79	172.79	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	8,511.88	10	\$3,292.64	25%	45%	\$43.26	2,798.02	2,798.02	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	120.45	10	\$55.91	10%	50%	\$51.91	395.95	395.95	MTR_GRWND<100HP-Motors-7PLN-v5-17
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	66.92	10	\$19.85	6%	25%	\$33.17	104.49	104.49	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,003.76	12	\$245.43	16%	25%	\$24.16	783.64	783.64	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	267.67	10	\$73.84	16%	36%	\$30.85	450.59	450.59	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	22,260.73	10	\$3,043.36	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	32,571.48	15	\$8,225.74	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100

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Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	11,807.95	10	\$604.92	0%	0%	\$5.73	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	10,529.44	1	\$54.66	0%	0%	\$4.38	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	4,081.85	2	\$14.74	0%	0%	\$1.57	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	734.40	15	\$386.07	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	31.07	15	\$4.43	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	106.10	15	\$15.06	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	Existing	659.23	10	\$7,246.83	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	164.78	15	\$1.38	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	217.72	15	\$22.86	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	132.19	15	\$27.60	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	132.19	15	\$86.68	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	20.60	15	\$4.96	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	41.19	15	\$23.92	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	41.19	15	\$0.48	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	12,726.45	10	\$3,290.66	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	13,180.97	10	\$246.44	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	10,771.06	10	\$1,282.29	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	1,204.83	10	\$683.56	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	965.03	10	\$225.17	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	965.03	10	\$92.31	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	22,725.81	10	\$2,455.58	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	10.80	5	\$1.58	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	202.86	1	\$9.37	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	276.44	10	\$324.49	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	596.47	10	\$324.49	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	22.61	10	\$324.49	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	70.35	10	\$324.49	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	16.39	10	\$324.49	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	1,003.76	10	\$324.49	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	482.51	10	\$324.49	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	64.54	10	\$324.49	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	798.59	3	\$1,936.44	3%	11%	\$79.20	4.39	4.48	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	1,723.14	3	\$1,936.44	3%	11%	\$79.20	3.30	3.32	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	65.32	3	\$1,936.44	3%	11%	\$79.20	1.98	2.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	203.23	3	\$1,936.44	3%	11%	\$79.20	5.39	5.75	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	47.35	3	\$1,936.44	3%	11%	\$79.20	1.36	1.41	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	2,899.74	3	\$1,936.44	3%	11%	\$79.20	90.30	90.30	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	1,393.93	3	\$1,936.44	3%	11%	\$79.20	43.41	43.41	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	186.44	3	\$1,936.44	3%	11%	\$79.20	10.01	7.78	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	234.49	3	\$2,747.23	0%	0%	\$149.56	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	54.63	3	\$2,747.23	0%	0%	\$149.56	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	3,345.85	3	\$2,747.23	0%	0%	\$149.56	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	Existing	1,608.38	3	\$2,747.23	0%	0%	\$149.56	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	215.13	3	\$2,747.23	0%	0%	\$149.56	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	234.49	3	\$1,744.00	10%	40%	\$94.94	93.23	99.56	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	54.63	3	\$1,744.00	10%	40%	\$94.94	23.60	24.42	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	3,345.85	3	\$1,744.00	10%	40%	\$94.94	1,562.86	1,562.86	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	1,608.38	3	\$1,744.00	10%	40%	\$94.94	751.28	751.28	IND_RCX-Process-AEG-1

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Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	215.13	3	\$1,744.00	10%	40%	\$94.94	173.29	134.68	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	210.79	12	\$126.43	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	3,510.64	11	\$3,007.14	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	Existing	2,209.47	20	\$1,214.41	0%	94%	\$27.44	10,968.33	10,968.33	WHP Analysis
Stone Clay Glass Products	Process	WHP - ORC	employee	Existing	1,062.11	20	\$1,214.41	0%	94%	\$27.44	5,272.58	5,272.58	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	1,198.18	20	\$493.93	0%	72%	\$20.58	4,764.59	4,764.59	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	Existing	575.97	20	\$493.93	0%	72%	\$20.58	2,290.38	2,290.38	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	20.36	20.38	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	13.58	13.58	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	7.96	7.96	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	7.94	7.94	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.57	0.57	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.34	0.34	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.16	0.16	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	9.05	9.05	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	5.31	5.31	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	2.51	2.51	Building Energy Simulation Tool

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Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	1.25	1.25	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	0.73	0.73	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	2.43	2.43	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	25.09	25.09	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	12.18	12.18	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	2.41	2.41	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	8.70	8.70	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	3.92	5	\$0.40	18%	30%	\$19.86	5.82	5.84	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	1.59	1.59	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	51.07	51.15	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	65.96	65.96	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	0.86	0.86	RTU_MNT-Cooling-PGE-R2-1

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Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	12.46	12.47	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	8.31	8.31	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	4.87	4.87	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	2.37	15	\$0.36	22%	41%	\$13.20	131.02	131.56	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	3.32	15	\$0.60	22%	41%	\$15.56	183.42	184.18	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.32	0.32	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	14.48	14.63	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	17.79	17.96	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	13.83	14.07	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	10.95	11.15	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	11.48	11.70	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	12,309.30	20	\$4,232.00	15%	20%	\$25.42	45.03	45.03	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	121.10	15	\$121.33	20%	50%	\$86.27	15.07	15.07	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	193.75	15	\$84.92	20%	50%	\$37.74	24.12	24.12	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	1,715.20	10	\$251.48	9%	38%	\$16.40	164.73	164.73	PUMP_EQPT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	1,286.40	12	\$383.26	9%	38%	\$29.44	184.68	184.68	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	1,286.40	10	\$399.47	9%	38%	\$34.73	173.61	173.61	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	1,327.55	10	\$133.47	9%	38%	\$11.24	127.50	127.50	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	1,568.92	10	\$220.84	9%	38%	\$15.74	211.74	211.74	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	2,413.73	10	\$1,113.29	9%	38%	\$51.58	325.75	325.75	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	760.32	10	\$57.08	17%	50%	\$8.40	85.19	85.19	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	9.99	9.99	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1

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Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	0.42	0.42	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	868.94	10	\$94.01	9%	15%	\$12.10	24.69	24.69	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	173.79	10	\$40.81	9%	38%	\$26.26	23.45	23.45	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	434.47	10	\$41.02	18%	75%	\$10.56	83.45	83.45	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	325.85	15	\$250.67	26%	45%	\$66.24	32.50	32.50	CMPAIR_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	10.86	10	\$3.85	17%	50%	\$39.63	1.22	1.22	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	65.17	10	\$12.53	17%	50%	\$21.51	7.30	7.30	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	26.37	26.37	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	65.17	15	\$34.47	17%	50%	\$45.54	9.07	9.07	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	New	608.26	6	\$94.12	26%	45%	\$25.53	40.63	40.63	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	9,356.96	10	\$3,292.64	25%	45%	\$39.35	886.18	886.18	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	120.45	10	\$55.91	10%	50%	\$51.91	114.08	114.08	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	66.92	10	\$19.85	6%	25%	\$33.17	30.10	30.10	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,003.76	12	\$245.43	16%	25%	\$24.16	240.17	240.17	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	267.67	10	\$73.84	16%	36%	\$30.85	89.98	89.98	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	New	24,470.84	10	\$3,043.36	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	New	35,805.26	15	\$8,225.74	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	12,980.27	10	\$604.92	0%	0%	\$5.21	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	11,574.83	1	\$54.66	0%	0%	\$3.98	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	4,487.11	2	\$14.74	0%	0%	\$1.43	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	807.31	15	\$386.07	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	34.16	15	\$4.43	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	116.63	15	\$15.06	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	New	724.68	10	\$7,246.83	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1

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Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	181.14	15	\$1.38	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	239.33	15	\$22.86	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	145.32	15	\$27.60	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	145.32	15	\$86.68	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	22.64	15	\$4.96	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	45.28	15	\$23.92	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	45.28	15	\$0.48	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	13,989.97	10	\$3,290.66	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	14,489.61	10	\$246.44	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	11,840.43	10	\$1,282.29	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	1,204.83	10	\$683.56	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	965.03	10	\$225.17	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1

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Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	965.03	10	\$92.31	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	24,982.09	10	\$2,455.58	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	10.80	5	\$1.58	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	223.00	1	\$9.37	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	294.38	10	\$324.49	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	603.44	10	\$324.49	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	21.87	10	\$324.49	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	59.77	10	\$324.49	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	15.32	10	\$324.49	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	1,003.76	10	\$324.49	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	482.51	10	\$324.49	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	63.42	10	\$324.49	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	850.42	3	\$1,936.44	3%	11%	\$78.54	0.28	0.28	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	1,743.27	3	\$1,936.44	3%	11%	\$78.54	0.20	0.20	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	63.18	3	\$1,936.44	3%	11%	\$78.54	0.12	0.12	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	172.66	3	\$1,936.44	3%	11%	\$78.54	0.31	0.31	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	44.25	3	\$1,936.44	3%	11%	\$78.54	0.08	0.08	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	2,899.74	3	\$1,936.44	3%	11%	\$78.54	5.30	5.30	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	1,393.93	3	\$1,936.44	3%	11%	\$78.54	2.55	2.55	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	183.23	3	\$1,936.44	3%	11%	\$78.54	0.54	0.38	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	199.22	3	\$2,747.23	10%	40%	\$150.50	7.15	7.20	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	51.06	3	\$2,747.23	10%	40%	\$150.50	1.84	1.86	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	New	3,345.85	3	\$2,747.23	10%	40%	\$150.50	205.91	205.91	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	New	1,608.38	3	\$2,747.23	10%	40%	\$150.50	98.98	98.98	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	211.41	3	\$2,747.23	10%	40%	\$150.50	7.86	6.53	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	199.22	3	\$1,744.00	0%	0%	\$95.54	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	51.06	3	\$1,744.00	0%	0%	\$95.54	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	3,345.85	3	\$1,744.00	0%	0%	\$95.54	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	1,608.38	3	\$1,744.00	0%	0%	\$95.54	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	211.41	3	\$1,744.00	0%	0%	\$95.54	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	231.72	12	\$126.43	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	3,859.19	11	\$3,007.14	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	New	2,209.47	20	\$1,214.41	0%	94%	\$27.44	6,574.44	6,574.44	WHP Analysis

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Stone Clay Glass Products	Process	WHP - ORC	employee	New	1,062.11	20	\$1,214.41	0%	94%	\$27.44	3,160.39	3,160.39	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	New	1,198.18	20	\$493.93	0%	72%	\$20.58	2,135.18	2,135.18	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	New	575.97	20	\$493.93	0%	72%	\$20.58	1,026.40	1,026.40	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	169.05	172.59	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	121.05	121.59	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	73.02	73.87	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	65.92	67.29	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	5.12	5.14	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	3.09	3.12	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	1.30	1.32	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	80.70	81.06	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	48.68	49.25	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	21.26	21.70	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	11.37	11.42	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	6.86	6.94	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	50.33	51.45	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	419.38	428.78	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	203.63	208.19	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	36.09	37.25	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	161.84	167.01	AEG-BEST

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Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	1.02	5	\$0.40	18%	30%	\$77.16	197.19	203.50	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	25.40	25.86	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	802.64	827.07	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	1,113.19	1,120.97	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	58.58	60.75	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	313.44	319.99	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	224.44	225.43	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	135.38	136.96	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.78	15	\$0.36	7%	33%	\$43.75	1,222.42	1,301.41	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.09	15	\$0.60	7%	33%	\$51.56	1,711.39	1,821.98	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	6.15	6.90	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	237.77	243.85	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	243.48	249.70	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	286.48	301.87	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	417.78	440.22	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	285.59	300.93	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	32,476.55	20	\$12,274.14	15%	20%	\$27.94	316.71	316.71	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	83.26	15	\$91.70	20%	50%	\$94.84	178.73	178.73	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	133.22	15	\$64.18	20%	50%	\$41.48	285.98	285.98	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	360.97	10	\$58.18	9%	38%	\$18.02	742.32	742.32	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	270.73	12	\$88.67	9%	38%	\$32.37	542.22	542.22	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	270.73	10	\$92.42	9%	38%	\$38.18	542.22	542.22	PUMP_VSD-Motors-UN-v1.0-3

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Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	94.82	10	\$10.48	9%	38%	\$12.36	194.99	194.99	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	112.06	10	\$17.34	9%	38%	\$17.30	224.44	224.44	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	172.40	10	\$87.41	9%	38%	\$56.70	345.29	345.29	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	638.12	10	\$52.66	17%	50%	\$9.23	1,530.99	1,530.99	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	112.25	112.25	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	7.60	7.60	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	729.28	10	\$86.73	9%	15%	\$13.30	307.50	307.50	E3T
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	145.86	10	\$37.65	9%	38%	\$28.87	292.13	292.13	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	364.64	10	\$37.85	18%	75%	\$11.61	1,499.75	1,499.75	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	273.48	15	\$231.27	26%	45%	\$72.82	365.16	365.16	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	9.12	10	\$3.55	17%	50%	\$43.57	21.87	21.87	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	54.70	10	\$11.56	17%	50%	\$23.64	131.23	131.23	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3

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Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	371.44	371.44	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	54.70	15	\$31.80	17%	50%	\$50.06	131.23	131.23	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	510.50	6	\$86.84	26%	45%	\$28.07	681.63	681.63	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,649.11	10	\$637.92	25%	45%	\$43.26	2,317.84	2,317.84	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	24.34	10	\$11.30	10%	50%	\$51.91	342.06	342.06	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	13.52	10	\$4.01	6%	25%	\$33.17	90.27	90.27	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	202.81	12	\$49.59	16%	25%	\$24.16	676.99	676.99	2015-mdu-irp-report--volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	54.08	10	\$14.92	16%	36%	\$30.85	389.27	389.27	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	64,563.22	10	\$8,826.72	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	94,467.68	15	\$23,857.26	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	13,658.65	10	\$604.92	0%	0%	\$4.95	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	30,538.74	1	\$54.66	0%	0%	\$1.51	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	11,838.66	2	\$14.74	0%	0%	\$0.54	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	555.08	15	\$291.81	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	23.85	15	\$3.40	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	32.47	15	\$4.61	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	152.51	10	\$1,676.53	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	241.36	15	\$2.02	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	164.56	15	\$17.28	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	99.91	15	\$20.86	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	99.91	15	\$65.51	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	30.17	15	\$7.26	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	60.34	15	\$35.04	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	60.34	15	\$0.70	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1

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Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	2,465.66	10	\$637.54	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,553.72	10	\$47.75	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,263.32	10	\$269.45	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	344.89	10	\$195.67	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	276.25	10	\$64.46	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	276.25	10	\$26.43	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	4,402.96	10	\$475.75	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.09	5	\$0.45	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	39.30	1	\$1.81	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	278.96	10	\$174.48	15%	15%	\$14.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	601.92	10	\$174.48	15%	15%	\$14.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	22.82	10	\$174.48	15%	15%	\$14.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	62.91	10	\$174.48	15%	15%	\$14.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	14.66	10	\$174.48	15%	15%	\$14.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	202.81	10	\$174.48	15%	15%	\$14.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	138.12	10	\$174.48	15%	15%	\$14.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	37.44	10	\$174.48	15%	15%	\$14.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	805.89	3	\$1,041.26	3%	11%	\$79.71	18.93	19.32	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	1,738.89	3	\$1,041.26	3%	11%	\$79.71	14.25	14.32	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	65.92	3	\$1,041.26	3%	11%	\$79.71	8.54	8.64	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	181.75	3	\$1,041.26	3%	11%	\$79.71	20.60	22.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	42.34	3	\$1,041.26	3%	11%	\$79.71	5.21	5.40	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	585.89	3	\$1,041.26	3%	11%	\$79.71	78.01	78.01	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	399.02	3	\$1,041.26	3%	11%	\$79.71	53.13	53.13	IND_SEM-Process-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	108.15	3	\$1,041.26	3%	11%	\$79.71	24.83	19.30	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	209.71	3	\$734.55	0%	0%	\$142.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	48.86	3	\$734.55	0%	0%	\$142.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	676.03	3	\$734.55	0%	0%	\$142.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	460.41	3	\$734.55	0%	0%	\$142.86	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	124.79	3	\$734.55	0%	0%	\$142.86	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	209.71	3	\$466.31	5%	39%	\$90.69	404.04	431.47	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	48.86	3	\$466.31	5%	39%	\$90.69	102.29	105.83	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	676.03	3	\$466.31	5%	39%	\$90.69	1,530.19	1,530.19	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	460.41	3	\$466.31	5%	39%	\$90.69	1,042.13	1,042.13	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	124.79	3	\$466.31	5%	39%	\$90.69	487.10	378.56	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	48.77	12	\$29.25	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	812.18	11	\$695.69	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	Existing	226.57	20	\$124.53	0%	73%	\$24.17	3,706.59	3,706.59	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	Existing	154.31	20	\$124.53	0%	73%	\$24.17	2,524.38	2,524.38	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	87.86	87.92	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	58.59	58.59	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	34.35	34.35	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	34.26	34.28	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	2.48	2.48	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	1.45	1.45	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.67	0.67	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	39.06	39.06	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	22.90	22.90	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	10.82	10.82	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	5.39	5.39	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	3.16	3.16	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	10.46	10.46	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	108.27	108.27	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	52.57	52.57	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	10.40	10.40	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	37.55	37.55	AEG-BEST
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	1.08	5	\$0.40	18%	30%	\$71.86	25.10	25.18	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	6.86	6.86	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	220.35	220.71	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	284.59	284.59	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	3.70	3.73	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	53.75	53.82	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	35.84	35.84	STAT_WIFI-AII-7PLN-v2-1

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Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	21.01	21.01	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.65	15	\$0.36	22%	41%	\$47.76	500.85	502.92	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.92	15	\$0.60	22%	41%	\$56.29	701.19	704.09	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	1.22	1.23	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	55.36	55.93	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	68.04	68.68	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	52.87	53.81	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	41.87	42.64	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	43.91	44.73	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	35,700.90	20	\$12,274.14	15%	20%	\$25.42	111.69	111.69	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	91.53	15	\$91.70	20%	50%	\$86.27	48.71	48.71	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	146.44	15	\$64.18	20%	50%	\$37.74	77.94	77.94	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	396.80	10	\$58.18	9%	38%	\$16.40	162.95	162.95	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	297.60	12	\$88.67	9%	38%	\$29.44	182.68	182.68	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	297.60	10	\$92.42	9%	38%	\$34.73	171.73	171.73	PUMP_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	104.23	10	\$10.48	9%	38%	\$11.24	42.80	42.80	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	123.19	10	\$17.34	9%	38%	\$15.74	71.08	71.08	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	189.52	10	\$87.41	9%	38%	\$51.58	109.36	109.36	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	701.48	10	\$52.66	17%	50%	\$8.40	336.07	336.07	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessiccant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	39.41	39.41	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	1.67	1.67	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	801.69	10	\$86.73	9%	15%	\$12.10	97.39	97.39	E3T

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Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	160.34	10	\$37.65	9%	38%	\$26.26	92.52	92.52	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	400.84	10	\$37.85	18%	75%	\$10.56	329.21	329.21	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	300.63	15	\$231.27	26%	45%	\$66.24	128.22	128.22	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	10.02	10	\$3.55	17%	50%	\$39.63	4.80	4.80	CMPAIR_LPDPFILT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	60.13	10	\$11.56	17%	50%	\$21.51	28.81	28.81	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	104.02	104.02	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	60.13	15	\$31.80	17%	50%	\$45.54	35.76	35.76	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	561.18	6	\$86.84	26%	45%	\$25.53	160.29	160.29	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,812.84	10	\$637.92	25%	45%	\$39.35	734.10	734.10	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	24.34	10	\$11.30	10%	50%	\$51.91	98.55	98.55	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	13.52	10	\$4.01	6%	25%	\$33.17	26.01	26.01	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	202.81	12	\$49.59	16%	25%	\$24.16	207.49	207.49	2015-mdu-irp-report--volume-iii.pdf

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Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	54.08	10	\$14.92	16%	36%	\$30.85	77.73	77.73	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	70,973.22	10	\$8,826.72	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	103,846.67	15	\$23,857.26	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	15,014.72	10	\$604.92	0%	0%	\$4.51	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	33,570.70	1	\$54.66	0%	0%	\$1.37	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	13,014.04	2	\$14.74	0%	0%	\$0.49	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	610.19	15	\$291.81	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	26.21	15	\$3.40	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	35.70	15	\$4.61	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	167.65	10	\$1,676.53	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	265.32	15	\$2.02	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	180.89	15	\$17.28	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	109.83	15	\$20.86	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	109.83	15	\$65.51	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	33.16	15	\$7.26	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	66.33	15	\$35.04	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	66.33	15	\$0.70	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	2,710.45	10	\$637.54	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,807.26	10	\$47.75	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	2,488.03	10	\$269.45	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	344.89	10	\$195.67	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	276.25	10	\$64.46	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	276.25	10	\$26.43	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	4,840.10	10	\$475.75	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1

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Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	3.09	5	\$0.45	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	43.20	1	\$1.81	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	297.07	10	\$174.48	15%	15%	\$14.13	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	608.96	10	\$174.48	15%	15%	\$14.13	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	22.07	10	\$174.48	15%	15%	\$14.13	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	53.45	10	\$174.48	15%	15%	\$14.13	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	13.70	10	\$174.48	15%	15%	\$14.13	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	202.81	10	\$174.48	15%	15%	\$14.13	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	138.12	10	\$174.48	15%	15%	\$14.13	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	36.79	10	\$174.48	15%	15%	\$14.13	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	858.19	3	\$1,041.26	3%	11%	\$78.30	1.22	1.22	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	1,759.21	3	\$1,041.26	3%	11%	\$78.30	0.86	0.86	IND_SEM-HVAC-AEG-1

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Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	63.76	3	\$1,041.26	3%	11%	\$78.30	0.50	0.50	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	154.41	3	\$1,041.26	3%	11%	\$78.30	1.17	1.19	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	39.58	3	\$1,041.26	3%	11%	\$78.30	0.30	0.31	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	585.89	3	\$1,041.26	3%	11%	\$78.30	4.58	4.58	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	399.02	3	\$1,041.26	3%	11%	\$78.30	3.12	3.12	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	106.28	3	\$1,041.26	3%	11%	\$78.30	1.35	0.95	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	178.17	3	\$734.55	5%	39%	\$145.30	30.98	31.19	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	45.66	3	\$734.55	5%	39%	\$145.30	7.98	8.08	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	New	676.03	3	\$734.55	5%	39%	\$145.30	201.65	201.65	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	New	460.41	3	\$734.55	5%	39%	\$145.30	137.33	137.33	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	122.63	3	\$734.55	5%	39%	\$145.30	22.10	18.35	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	178.17	3	\$466.31	0%	0%	\$92.24	0.00	0.00	IND_RCX-Motors-AEG-1

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Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	45.66	3	\$466.31	0%	0%	\$92.24	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	676.03	3	\$466.31	0%	0%	\$92.24	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	460.41	3	\$466.31	0%	0%	\$92.24	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	122.63	3	\$466.31	0%	0%	\$92.24	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	53.61	12	\$29.25	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	892.81	11	\$695.69	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	New	226.57	20	\$124.53	0%	73%	\$24.17	2,221.74	2,221.74	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	New	154.31	20	\$124.53	0%	73%	\$24.17	1,513.12	1,513.12	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	9.12	9.31	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	6.53	6.56	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	3.94	3.98	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	3.55	3.63	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	0.28	0.28	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	0.17	0.17	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.07	0.07	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	4.35	4.37	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	2.62	2.66	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	1.15	1.17	Building Energy Simulation Tool

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Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	0.61	0.62	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	0.37	0.37	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	2.71	2.77	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	22.61	23.12	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	10.98	11.23	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	1.95	2.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	8.73	9.01	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.13	5	\$0.40	18%	30%	\$596.24	10.63	10.97	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	1.37	1.39	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	43.28	44.60	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	60.02	60.44	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	3.16	3.28	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	16.90	17.25	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	12.10	12.16	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	7.30	7.38	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.36	7%	33%	\$338.08	84.35	89.80	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.60	7%	33%	\$398.46	118.09	125.72	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	0.42	0.48	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	16.41	16.83	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	16.80	17.23	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	19.77	20.83	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	28.83	30.38	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	19.71	20.77	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,000.90	20	\$756.22	15%	20%	\$27.94	32.84	32.84	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$70.30	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$49.20	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,477.54	10	\$238.15	9%	38%	\$18.02	818.24	818.24	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	1,108.15	12	\$362.94	9%	38%	\$32.37	597.68	597.68	PUMP_SYSOPT-Motors-UN-v1.0-5

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Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,108.15	10	\$378.29	9%	38%	\$38.18	597.68	597.68	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	2,000.73	10	\$221.13	9%	38%	\$12.36	1,107.98	1,107.98	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	2,364.50	10	\$365.86	9%	38%	\$17.30	1,275.29	1,275.29	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	3,637.70	10	\$1,844.41	9%	38%	\$56.70	1,961.98	1,961.98	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	136.19	10	\$11.24	17%	50%	\$9.23	87.99	87.99	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	6.45	6.45	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	0.44	0.44	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	155.65	10	\$18.51	9%	15%	\$13.30	17.67	17.67	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	31.13	10	\$8.04	9%	38%	\$28.87	16.79	16.79	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	77.82	10	\$8.08	18%	75%	\$11.61	86.20	86.20	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	58.37	15	\$49.36	26%	45%	\$72.82	20.99	20.99	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.95	10	\$0.76	17%	50%	\$43.57	1.26	1.26	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	11.67	10	\$2.47	17%	50%	\$23.64	7.54	7.54	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	21.35	21.35	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	11.67	15	\$6.79	17%	50%	\$50.06	7.54	7.54	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Wastewater	Motors	Compressed Air - End Use Optimization	employee	Existing	108.95	6	\$18.53	26%	45%	\$28.07	39.18	39.18	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	325.49	10	\$125.91	25%	45%	\$43.26	123.20	123.20	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	50.85	10	\$23.60	10%	50%	\$51.91	192.45	192.45	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	28.25	10	\$8.38	6%	25%	\$33.17	50.79	50.79	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	423.72	12	\$103.61	16%	25%	\$24.16	380.89	380.89	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	112.99	10	\$31.17	16%	36%	\$30.85	219.01	219.01	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	Existing	3,977.77	10	\$543.82	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	Existing	5,820.20	15	\$1,469.86	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	8,945.37	10	\$604.92	0%	0%	\$7.56	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,881.51	1	\$54.66	0%	0%	\$24.50	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	729.39	2	\$14.74	0%	0%	\$8.81	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$223.71	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	11.98	15	\$1.71	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	173.39	15	\$24.62	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Wastewater	Motors	Automatic Milker Takeoffs	Cows	Existing	624.27	10	\$6,862.50	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$2.85	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$13.25	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$15.99	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$50.23	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$10.24	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$49.42	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$0.99	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	486.66	10	\$125.83	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	504.04	10	\$9.42	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$45.59	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	269.73	10	\$153.03	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	216.05	10	\$50.41	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	216.05	10	\$20.67	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	869.03	10	\$93.90	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	2.42	5	\$0.35	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	7.76	1	\$0.36	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	55.86	10	\$84.62	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	120.52	10	\$84.62	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	4.57	10	\$84.62	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	16.12	10	\$84.62	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.76	10	\$84.62	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	423.72	10	\$84.62	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	Existing	21.60	10	\$84.62	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	14.42	10	\$84.62	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	Existing	161.36	3	\$504.97	3%	11%	\$79.21	8.67	8.86	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	Existing	348.18	3	\$504.97	3%	11%	\$79.21	6.53	6.56	IND_SEM-HVAC-AEG-1
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	13.20	3	\$504.97	3%	11%	\$79.21	3.91	3.96	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	46.58	3	\$504.97	3%	11%	\$79.21	12.08	12.90	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	10.85	3	\$504.97	3%	11%	\$79.21	3.06	3.16	IND_SEM-Lighting-AEG-1

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Wastewater	Motors	Strategic Energy Management	employee	Existing	1,224.08	3	\$504.97	3%	11%	\$79.21	373.06	373.06	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	Existing	62.41	3	\$504.97	3%	11%	\$79.21	19.02	19.02	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	41.64	3	\$504.97	3%	11%	\$79.21	21.89	17.01	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	Existing	53.75	3	\$812.09	0%	0%	\$151.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	Existing	12.52	3	\$812.09	0%	0%	\$151.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	Existing	1,412.41	3	\$812.09	0%	0%	\$151.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	Existing	72.02	3	\$812.09	0%	0%	\$151.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	Existing	48.05	3	\$812.09	0%	0%	\$151.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	53.75	3	\$515.53	5%	39%	\$96.05	27.88	29.78	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	12.52	3	\$515.53	5%	39%	\$96.05	7.06	7.30	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	Existing	1,412.41	3	\$515.53	5%	39%	\$96.05	860.91	860.91	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	Existing	72.02	3	\$515.53	5%	39%	\$96.05	43.90	43.90	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	48.05	3	\$515.53	5%	39%	\$96.05	50.51	39.25	IND_RCX-Process-AEG-1
Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	199.61	12	\$119.72	15%	35%	\$59.27	75.55	75.55	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	3,324.46	11	\$2,847.65	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	4.74	4.74	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	3.16	3.16	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	1.85	1.85	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	1.85	1.85	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.13	0.13	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.08	0.08	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.04	0.04	Building Energy Simulation Tool

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Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	2.11	2.11	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	1.23	1.23	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	0.58	0.58	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	0.29	0.29	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	0.17	0.17	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	0.56	0.56	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	5.84	5.84	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	2.83	2.83	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	0.56	0.56	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	2.02	2.02	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.14	5	\$0.40	18%	30%	\$555.28	1.35	1.36	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	0.37	0.37	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	11.88	11.90	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	15.35	15.35	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	0.20	0.20	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	2.90	2.90	STAT_WIFI-All-7PLN-v2-1

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Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	1.93	1.93	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	1.13	1.13	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.08	15	\$0.36	22%	41%	\$369.07	34.57	34.72	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.12	15	\$0.60	22%	41%	\$434.97	48.40	48.60	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.08	0.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	3.82	3.86	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	4.70	4.74	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	3.65	3.71	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	2.89	2.94	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	3.03	3.09	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,199.55	20	\$756.22	15%	20%	\$25.42	11.58	11.58	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$70.30	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$49.20	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	1,624.23	10	\$238.15	9%	38%	\$16.40	179.61	179.61	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	New	1,218.17	12	\$362.94	9%	38%	\$29.44	201.36	201.36	PUMP_SYSOPT-Motors-UN-v1.0-5
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	1,218.17	10	\$378.29	9%	38%	\$34.73	189.29	189.29	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	2,199.37	10	\$221.13	9%	38%	\$11.24	243.21	243.21	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	New	2,599.26	10	\$365.86	9%	38%	\$15.74	403.90	403.90	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	3,998.86	10	\$1,844.41	9%	38%	\$51.58	621.39	621.39	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	149.71	10	\$11.24	17%	50%	\$8.40	19.31	19.31	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	2.27	2.27	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	0.10	0.10	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	171.10	10	\$18.51	9%	15%	\$12.10	5.60	5.60	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	New	34.22	10	\$8.04	9%	38%	\$26.26	5.32	5.32	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	85.55	10	\$8.08	18%	75%	\$10.56	18.92	18.92	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	64.16	15	\$49.36	26%	45%	\$66.24	7.37	7.37	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.14	10	\$0.76	17%	50%	\$39.63	0.28	0.28	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	12.83	10	\$2.47	17%	50%	\$21.51	1.66	1.66	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	5.98	5.98	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	12.83	15	\$6.79	17%	50%	\$45.54	2.06	2.06	CMPAIR_STORAGE-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - End Use Optimization	employee	New	119.77	6	\$18.53	26%	45%	\$25.53	9.21	9.21	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	357.81	10	\$125.91	25%	45%	\$39.35	39.02	39.02	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	50.85	10	\$23.60	10%	50%	\$51.91	55.45	55.45	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	28.25	10	\$8.38	6%	25%	\$33.17	14.63	14.63	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	423.72	12	\$103.61	16%	25%	\$24.16	116.73	116.73	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	112.99	10	\$31.17	16%	36%	\$30.85	43.73	43.73	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	New	4,372.70	10	\$543.82	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	New	6,398.05	15	\$1,469.86	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	9,833.49	10	\$604.92	0%	0%	\$6.88	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,068.31	1	\$54.66	0%	0%	\$22.28	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	801.80	2	\$14.74	0%	0%	\$8.01	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$223.71	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	190.60	15	\$24.62	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Wastewater	Motors	Automatic Milker Takeoffs	Cows	New	686.25	10	\$6,862.50	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$2.85	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$13.25	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$15.99	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$50.23	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$10.24	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$49.42	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$0.99	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	New	534.97	10	\$125.83	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	554.08	10	\$9.42	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$45.59	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Wastewater	Process	Paper: Premium Control Large Material	employee	New	269.73	10	\$153.03	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	216.05	10	\$50.41	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	216.05	10	\$20.67	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	955.31	10	\$93.90	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	New	2.42	5	\$0.35	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	8.53	1	\$0.36	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	New	59.48	10	\$84.62	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	New	121.93	10	\$84.62	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	New	4.42	10	\$84.62	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	13.70	10	\$84.62	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	3.51	10	\$84.62	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	New	423.72	10	\$84.62	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	New	21.60	10	\$84.62	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	14.17	10	\$84.62	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	New	171.84	3	\$504.97	3%	11%	\$78.72	0.56	0.56	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	New	352.25	3	\$504.97	3%	11%	\$78.72	0.39	0.39	IND_SEM-HVAC-AEG-1

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Wastewater	Ventilation	Strategic Energy Management	employee	New	12.77	3	\$504.97	3%	11%	\$78.72	0.23	0.23	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	39.57	3	\$504.97	3%	11%	\$78.72	0.69	0.70	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	10.14	3	\$504.97	3%	11%	\$78.72	0.18	0.18	IND_SEM-Lighting-AEG-1
Wastewater	Motors	Strategic Energy Management	employee	New	1,224.08	3	\$504.97	3%	11%	\$78.72	21.89	21.89	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	New	62.41	3	\$504.97	3%	11%	\$78.72	1.12	1.12	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	40.93	3	\$504.97	3%	11%	\$78.72	1.19	0.84	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	New	45.66	3	\$812.09	5%	39%	\$152.04	2.14	2.15	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	New	11.70	3	\$812.09	5%	39%	\$152.04	0.55	0.56	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	New	1,412.41	3	\$812.09	5%	39%	\$152.04	113.43	113.43	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	New	72.02	3	\$812.09	5%	39%	\$152.04	1.16	1.16	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	New	47.22	3	\$812.09	5%	39%	\$152.04	2.29	1.90	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	New	45.66	3	\$515.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	New	11.70	3	\$515.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	New	1,412.41	3	\$515.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	New	72.02	3	\$515.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	New	47.22	3	\$515.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Process-AEG-1

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Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	New	219.43	12	\$119.72	15%	35%	\$53.92	25.45	25.45	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	3,654.52	11	\$2,847.65	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	70.54	72.01	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	50.51	50.73	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	30.47	30.82	Building Energy Simulation Tool

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Water	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	27.50	28.08	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	2.14	2.15	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	1.29	1.30	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.54	0.55	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	33.67	33.82	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	20.31	20.55	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	8.87	9.05	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	4.74	4.76	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	2.86	2.89	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	21.00	21.47	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	174.99	178.91	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	84.96	86.87	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	15.06	15.54	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	67.53	69.69	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	Existing	1.20	5	\$0.40	18%	30%	\$65.75	82.28	84.91	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	10.60	10.79	VENT_DCV-Ventilation-7PLN-v5-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	334.91	345.10	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	464.49	467.73	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	24.44	25.35	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	130.78	133.52	STAT_WIFI-All-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	93.65	94.06	STAT_WIFI-All-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	56.49	57.15	STAT_WIFI-All-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.91	15	\$0.36	7%	33%	\$37.28	652.85	695.04	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.28	15	\$0.60	7%	33%	\$43.94	913.99	973.05	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	3.29	3.68	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	126.99	130.23	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	130.03	133.35	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	153.00	161.22	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	223.12	235.11	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	152.52	160.72	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	4,100.65	20	\$1,549.79	15%	20%	\$27.94	254.14	254.14	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$144.08	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$100.84	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	10,938.98	10	\$1,763.13	9%	38%	\$18.02	22,874.27	22,874.27	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	Existing	8,204.24	12	\$2,687.01	9%	38%	\$32.37	16,708.39	16,708.39	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	8,204.24	10	\$2,800.66	9%	38%	\$38.18	16,708.39	16,708.39	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$21.21	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$35.09	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$176.87	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	279.11	10	\$23.03	17%	50%	\$9.23	680.92	680.92	CMPAIR_EQPT-Motors-7PLN-v5-2
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	49.93	49.93	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	3.38	3.38	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	318.98	10	\$37.94	9%	15%	\$13.30	136.76	136.76	E3T
Water	Motors	Compressed Air - System Controls	employee	Existing	63.80	10	\$16.47	9%	38%	\$28.87	129.93	129.93	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	159.49	10	\$16.56	18%	75%	\$11.61	667.02	667.02	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	119.62	15	\$101.16	26%	45%	\$72.82	162.41	162.41	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	3.99	10	\$1.55	17%	50%	\$43.57	9.73	9.73	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	23.92	10	\$5.06	17%	50%	\$23.64	58.36	58.36	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	165.20	165.20	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	23.92	15	\$13.91	17%	50%	\$50.06	58.36	58.36	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	Existing	223.29	6	\$37.98	26%	45%	\$28.07	303.16	303.16	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	444.38	10	\$171.90	25%	45%	\$43.26	635.10	635.10	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	130.26	10	\$60.46	10%	50%	\$51.91	1,489.26	1,489.26	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	72.36	10	\$21.46	6%	25%	\$33.17	393.00	393.00	MTR_GRWND>100HP-Motors-7PLN-v5-25
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,085.47	12	\$265.41	16%	25%	\$24.16	2,947.50	2,947.50	2015-mdu-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	289.46	10	\$79.85	16%	36%	\$30.85	1,694.79	1,694.79	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	Existing	8,152.08	10	\$1,114.51	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Water	Miscellaneous	Circulating Engine Block Heater	unit	Existing	11,927.96	15	\$3,012.34	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	66,227.31	10	\$604.92	0%	0%	\$1.02	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	3,855.97	1	\$54.66	0%	0%	\$11.95	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	1,494.81	2	\$14.74	0%	0%	\$4.30	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$458.47	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	11.98	15	\$1.71	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	626.36	15	\$88.94	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	Existing	4,621.81	10	\$50,806.70	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$5.84	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$27.15	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$32.77	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$102.93	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$21.00	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$101.28	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$2.03	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	Existing	664.42	10	\$171.80	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	688.15	10	\$12.87	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$93.44	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	Existing	552.79	10	\$313.63	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	442.77	10	\$103.31	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	Existing	442.77	10	\$42.35	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	Existing	1,186.46	10	\$128.20	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	Existing	4.96	5	\$0.72	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	10.59	1	\$0.49	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	Existing	114.47	10	\$173.42	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	Existing	247.00	10	\$173.42	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Ventilation	Transformer - High Efficiency	employee	Existing	9.36	10	\$173.42	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	33.04	10	\$173.42	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	7.70	10	\$173.42	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Motors	Transformer - High Efficiency	employee	Existing	868.38	10	\$173.42	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	Existing	44.28	10	\$173.42	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	29.54	10	\$173.42	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	Existing	330.70	3	\$1,034.88	3%	11%	\$79.21	67.13	68.53	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	Existing	713.56	3	\$1,034.88	3%	11%	\$79.21	50.55	50.77	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	Existing	27.05	3	\$1,034.88	3%	11%	\$79.21	30.29	30.65	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	Existing	95.46	3	\$1,034.88	3%	11%	\$79.21	93.51	99.85	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	22.24	3	\$1,034.88	3%	11%	\$79.21	23.67	24.49	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	Existing	2,508.65	3	\$1,034.88	3%	11%	\$79.21	2,886.92	2,886.92	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	Existing	127.91	3	\$1,034.88	3%	11%	\$79.21	147.20	147.20	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	Existing	85.35	3	\$1,034.88	3%	11%	\$79.21	169.37	131.63	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	Existing	110.15	3	\$1,664.30	0%	0%	\$151.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	Existing	25.66	3	\$1,664.30	0%	0%	\$151.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	Existing	2,894.59	3	\$1,664.30	0%	0%	\$151.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Process	Commissioning	employee	Existing	147.59	3	\$1,664.30	0%	0%	\$151.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	Existing	98.48	3	\$1,664.30	0%	0%	\$151.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	Existing	110.15	3	\$1,056.53	5%	39%	\$96.05	215.79	230.43	IND_RCX-Motors-AEG-1

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Water	Exterior Lighting	Retrocommissioning	employee	Existing	25.66	3	\$1,056.53	5%	39%	\$96.05	54.63	56.52	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	Existing	2,894.59	3	\$1,056.53	5%	39%	\$96.05	6,662.14	6,662.14	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	Existing	147.59	3	\$1,056.53	5%	39%	\$96.05	339.69	339.69	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	Existing	98.48	3	\$1,056.53	5%	39%	\$96.05	390.86	303.77	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	1,477.85	12	\$886.36	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	15%	20%	\$31.14	1,793.75	1,793.75	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	24,612.71	11	\$21,082.68	15%	20%	\$89.69	8,793.89	8,793.89	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	36.66	36.68	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	24.45	24.45	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	14.33	14.33	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	14.29	14.30	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	1.03	1.03	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.61	0.61	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.28	0.28	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	16.30	16.30	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	9.55	9.55	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	4.51	4.52	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	2.25	2.25	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	1.32	1.32	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	4.37	4.37	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	45.18	45.18	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	21.93	21.93	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	4.34	4.34	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	15.67	15.67	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	New	1.27	5	\$0.40	18%	30%	\$61.24	10.47	10.51	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	2.86	2.86	VENT_DCV-Ventilation-7PLN-v5-5
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	91.94	92.09	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	118.75	118.75	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	1.54	1.56	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	22.43	22.46	STAT_WIFI-AII-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	14.96	14.96	STAT_WIFI-AII-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	8.77	8.77	STAT_WIFI-AII-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.77	15	\$0.36	22%	41%	\$40.70	267.49	268.59	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.08	15	\$0.60	22%	41%	\$47.97	374.48	376.03	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.65	0.66	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	29.56	29.87	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	36.34	36.68	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	28.23	28.74	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	22.36	22.77	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	23.45	23.89	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	New	4,507.78	20	\$1,549.79	15%	20%	\$25.42	89.62	89.62	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$144.08	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$100.84	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	New	12,025.03	10	\$1,763.13	9%	38%	\$16.40	5,021.15	5,021.15	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	New	9,018.77	12	\$2,687.01	9%	38%	\$29.44	5,629.22	5,629.22	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	New	9,018.77	10	\$2,800.66	9%	38%	\$34.73	5,291.81	5,291.81	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$21.21	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$35.09	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$176.87	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	306.82	10	\$23.03	17%	50%	\$8.40	149.47	149.47	CMPAIR_EQPT-Motors-7PLN-v5-2

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Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	17.53	17.53	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	0.74	0.74	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	350.65	10	\$37.94	9%	15%	\$12.10	43.32	43.32	E3T
Water	Motors	Compressed Air - System Controls	employee	New	70.13	10	\$16.47	9%	38%	\$26.26	41.15	41.15	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	New	175.33	10	\$16.56	18%	75%	\$10.56	146.42	146.42	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	131.50	15	\$101.16	26%	45%	\$66.24	57.02	57.02	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	4.38	10	\$1.55	17%	50%	\$39.63	2.14	2.14	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	26.30	10	\$5.06	17%	50%	\$21.51	12.81	12.81	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	46.26	46.26	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	26.30	15	\$13.91	17%	50%	\$45.54	15.91	15.91	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	New	245.46	6	\$37.98	26%	45%	\$25.53	71.29	71.29	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	New	488.50	10	\$171.90	25%	45%	\$39.35	201.15	201.15	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	130.26	10	\$60.46	10%	50%	\$51.91	429.07	429.07	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	72.36	10	\$21.46	6%	25%	\$33.17	113.23	113.23	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,085.47	12	\$265.41	16%	25%	\$24.16	903.35	903.35	2015-mdu-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	289.46	10	\$79.85	16%	36%	\$30.85	338.42	338.42	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	New	8,961.44	10	\$1,114.51	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Circulating Engine Block Heater	unit	New	13,112.20	15	\$3,012.34	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	72,802.52	10	\$604.92	0%	0%	\$0.93	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	4,238.81	1	\$54.66	0%	0%	\$10.87	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	1,643.22	2	\$14.74	0%	0%	\$3.91	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$458.47	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	688.55	15	\$88.94	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	New	5,080.67	10	\$50,806.70	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$5.84	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$27.15	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$32.77	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$102.93	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$21.00	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$101.28	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$2.03	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	New	730.38	10	\$171.80	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	756.47	10	\$12.87	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$93.44	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	New	552.79	10	\$313.63	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	New	442.77	10	\$103.31	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	New	442.77	10	\$42.35	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	New	1,304.26	10	\$128.20	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	New	4.96	5	\$0.72	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	11.64	1	\$0.49	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	New	121.90	10	\$173.42	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	New	249.89	10	\$173.42	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Ventilation	Transformer - High Efficiency	employee	New	9.06	10	\$173.42	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	New	28.07	10	\$173.42	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	7.20	10	\$173.42	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Motors	Transformer - High Efficiency	employee	New	868.38	10	\$173.42	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	New	44.28	10	\$173.42	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	New	29.03	10	\$173.42	15%	15%	\$14.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	New	352.16	3	\$1,034.88	3%	11%	\$78.72	4.33	4.34	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	New	721.90	3	\$1,034.88	3%	11%	\$78.72	3.03	3.03	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	New	26.16	3	\$1,034.88	3%	11%	\$78.72	1.77	1.77	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	New	81.10	3	\$1,034.88	3%	11%	\$78.72	5.32	5.38	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	New	20.79	3	\$1,034.88	3%	11%	\$78.72	1.37	1.40	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	New	2,508.65	3	\$1,034.88	3%	11%	\$78.72	169.41	169.41	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	New	127.91	3	\$1,034.88	3%	11%	\$78.72	8.64	8.64	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	New	83.87	3	\$1,034.88	3%	11%	\$78.72	9.21	6.47	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	New	93.58	3	\$1,664.30	5%	39%	\$152.04	16.54	16.66	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	New	23.98	3	\$1,664.30	5%	39%	\$152.04	4.26	4.32	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	New	2,894.59	3	\$1,664.30	5%	39%	\$152.04	702.36	702.36	IND_SEM-HVAC-AEG-1

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Water	Process	Commissioning	employee	New	147.59	3	\$1,664.30	5%	39%	\$152.04	8.95	8.95	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	New	96.78	3	\$1,664.30	5%	39%	\$152.04	17.74	14.72	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	New	93.58	3	\$1,056.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Exterior Lighting	Retrocommissioning	employee	New	23.98	3	\$1,056.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	New	2,894.59	3	\$1,056.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	New	147.59	3	\$1,056.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	New	96.78	3	\$1,056.53	0%	0%	\$96.52	0.00	0.00	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	New	1,624.57	12	\$886.36	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	15%	20%	\$28.33	604.33	604.33	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	27,056.32	11	\$21,082.68	15%	20%	\$81.59	2,880.18	2,880.18	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	57.47	58.67	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	41.15	41.33	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	24.82	25.11	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	22.41	22.88	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	1.74	1.75	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	1.05	1.06	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.44	0.45	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	27.43	27.55	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	16.55	16.74	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	7.23	7.38	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	3.86	3.88	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	2.33	2.36	Building Energy Simulation Tool

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Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	17.11	17.49	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	142.57	145.76	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	69.22	70.77	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	12.27	12.66	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	55.02	56.77	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	7.87	5	\$0.40	18%	30%	\$10.01	67.03	69.18	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	8.63	8.79	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	272.85	281.15	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	378.42	381.06	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	19.91	20.65	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	106.55	108.78	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	76.30	76.63	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	46.02	46.56	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	5.98	15	\$0.36	7%	33%	\$5.68	362.97	386.43	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	8.37	15	\$0.60	7%	33%	\$6.69	508.16	541.00	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	1.83	2.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	70.62	72.42	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	72.31	74.16	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	85.09	89.66	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	124.08	130.75	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	84.82	89.38	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	16,308.15	20	\$6,163.48	15%	20%	\$27.94	175.55	175.55	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	528.77	15	\$582.38	20%	50%	\$94.84	250.59	250.59	RFG_FHPC-Refrigeration-RTF-v1.3-23
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	846.03	15	\$407.60	20%	50%	\$41.48	400.94	400.94	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	5,966.76	10	\$961.71	9%	38%	\$18.02	2,708.88	2,708.88	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	4,475.07	12	\$1,465.65	9%	38%	\$32.37	1,978.69	1,978.69	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	4,475.07	10	\$1,527.64	9%	38%	\$38.18	1,978.69	1,978.69	PUMP_VSD-Motors-UN-v1.0-3

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Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	1,499.59	10	\$165.74	9%	38%	\$12.36	680.81	680.81	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	1,772.25	10	\$274.22	9%	38%	\$17.30	783.61	783.61	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	2,726.53	10	\$1,382.42	9%	38%	\$56.70	1,205.56	1,205.56	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	11,064.19	10	\$913.05	17%	50%	\$9.23	5,860.28	5,860.28	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	429.68	429.68	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v.2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	29.09	29.09	CMPAIR_RFRGDRY-Motors-MEMD-v.2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	12,644.79	10	\$1,503.82	9%	15%	\$13.30	1,177.05	1,177.05	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	2,528.96	10	\$652.83	9%	38%	\$28.87	1,118.20	1,118.20	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	6,322.39	10	\$656.26	18%	75%	\$11.61	5,740.68	5,740.68	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	4,741.79	15	\$4,009.89	26%	45%	\$72.82	1,397.75	1,397.75	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	158.06	10	\$61.58	17%	50%	\$43.57	83.72	83.72	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	948.36	10	\$200.49	17%	50%	\$23.64	502.31	502.31	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	1,421.78	1,421.78	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	948.36	15	\$551.36	17%	50%	\$50.06	502.31	502.31	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	8,851.35	6	\$1,505.64	26%	45%	\$28.07	2,609.13	2,609.13	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	5,365.07	10	\$2,075.36	25%	45%	\$43.26	1,664.71	1,664.71	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	193.47	10	\$89.81	10%	50%	\$51.91	600.31	600.31	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	107.48	10	\$31.88	6%	25%	\$33.17	158.41	158.41	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	1,612.23	12	\$394.21	16%	25%	\$24.16	1,188.11	1,188.11	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	429.93	10	\$118.60	16%	36%	\$30.85	683.15	683.15	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	32,420.52	10	\$4,432.35	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	47,437.10	15	\$11,979.96	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	45,155.29	10	\$604.92	0%	0%	\$1.50	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	15,335.08	1	\$54.66	0%	0%	\$3.01	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	5,944.80	2	\$14.74	0%	0%	\$1.08	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	3,525.13	15	\$1,853.17	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	9.43	15	\$1.34	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	84.53	15	\$12.00	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	2,521.00	10	\$27,712.93	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	14,431.73	15	\$120.71	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	1,045.05	15	\$109.73	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	634.52	15	\$132.46	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	634.52	15	\$416.06	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1,803.97	15	\$434.30	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	3,607.93	15	\$2,094.96	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	3,607.93	15	\$42.01	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	8,021.54	10	\$2,074.12	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	8,308.02	10	\$155.33	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	5,653.59	10	\$673.06	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	2,434.12	10	\$1,380.99	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	1,949.65	10	\$454.90	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	1,949.65	10	\$186.50	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	14,324.17	10	\$1,547.76	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	21.82	5	\$3.19	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	127.86	1	\$5.90	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	429.56	10	\$535.03	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	926.86	10	\$535.03	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	35.14	10	\$535.03	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	84.64	10	\$535.03	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	19.72	10	\$535.03	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	1,612.23	10	\$535.03	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	974.83	10	\$535.03	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	93.99	10	\$535.03	15%	15%	\$14.29	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	1,240.94	3	\$3,192.86	3%	11%	\$79.20	6.43	6.57	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	2,677.61	3	\$3,192.86	3%	11%	\$79.20	4.84	4.87	IND_SEM-HVAC-AEG-1
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	101.51	3	\$3,192.86	3%	11%	\$79.20	2.90	2.94	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	244.52	3	\$3,192.86	3%	11%	\$79.20	6.12	6.53	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	56.96	3	\$3,192.86	3%	11%	\$79.20	1.55	1.60	IND_SEM-Lighting-AEG-1

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Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	4,657.56	3	\$3,192.86	3%	11%	\$79.20	136.90	136.90	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	2,816.16	3	\$3,192.86	3%	11%	\$79.20	82.78	82.78	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	271.54	3	\$3,192.86	3%	11%	\$79.20	13.76	10.70	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	282.14	3	\$4,697.58	0%	0%	\$150.45	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	65.73	3	\$4,697.58	0%	0%	\$150.45	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	Existing	5,374.11	3	\$4,697.58	0%	0%	\$150.45	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	Existing	3,249.42	3	\$4,697.58	0%	0%	\$150.45	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	313.31	3	\$4,697.58	0%	0%	\$150.45	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	282.14	3	\$2,982.12	5%	39%	\$95.51	120.00	128.15	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	65.73	3	\$2,982.12	5%	39%	\$95.51	30.38	31.43	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	5,374.11	3	\$2,982.12	5%	39%	\$95.51	2,685.43	2,685.43	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	Existing	3,249.42	3	\$2,982.12	5%	39%	\$95.51	1,623.73	1,623.73	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	313.31	3	\$2,982.12	5%	39%	\$95.51	269.99	209.83	IND_RCX-Process-AEG-1
Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	806.10	12	\$483.47	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	13,425.21	11	\$11,499.72	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	Existing	456.67	20	\$251.00	0%	34%	\$25.32	770.41	770.41	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	Existing	276.12	20	\$251.00	0%	34%	\$25.32	465.82	465.82	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	2,303.13	20	\$949.42	0%	34%	\$18.99	4,091.72	4,091.72	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	1,392.57	20	\$949.42	0%	34%	\$18.99	2,474.03	2,474.03	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	29.87	29.89	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	19.92	19.92	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	11.68	11.68	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	11.65	11.65	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.84	0.84	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.49	0.49	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.23	0.23	Building Energy Simulation Tool

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Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	13.28	13.28	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	7.78	7.78	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	3.68	3.68	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	1.83	1.83	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	1.07	1.07	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	3.56	3.56	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	36.80	36.80	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	17.87	17.87	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	3.53	3.53	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	12.76	12.76	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	8.34	5	\$0.40	18%	30%	\$9.32	8.53	8.56	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	2.33	2.33	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	74.91	75.03	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	96.75	96.75	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	1.26	1.27	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	18.27	18.30	STAT_WIFI-All-7PLN-v2-1

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Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	12.18	12.18	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	7.14	7.14	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	5.05	15	\$0.36	22%	41%	\$6.20	148.80	149.42	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	7.07	15	\$0.60	22%	41%	\$7.30	208.32	209.18	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.36	0.37	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	16.44	16.61	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	20.21	20.40	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	15.70	15.98	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	12.44	12.66	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	13.04	13.29	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	17,927.27	20	\$6,163.48	15%	20%	\$25.42	61.91	61.91	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	581.27	15	\$582.38	20%	50%	\$86.27	68.29	68.29	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	930.03	15	\$407.60	20%	50%	\$37.74	109.27	109.27	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	6,559.15	10	\$961.71	9%	38%	\$16.40	594.63	594.63	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	4,919.36	12	\$1,465.65	9%	38%	\$29.44	666.64	666.64	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	4,919.36	10	\$1,527.64	9%	38%	\$34.73	626.68	626.68	PUMP_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	1,648.48	10	\$165.74	9%	38%	\$11.24	149.44	149.44	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	1,948.20	10	\$274.22	9%	38%	\$15.74	248.18	248.18	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	2,997.23	10	\$1,382.42	9%	38%	\$51.58	381.82	381.82	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	12,162.67	10	\$913.05	17%	50%	\$8.40	1,286.39	1,286.39	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	150.87	150.87	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	6.39	6.39	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	13,900.19	10	\$1,503.82	9%	15%	\$12.10	372.79	372.79	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	2,780.04	10	\$652.83	9%	38%	\$26.26	354.15	354.15	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	6,950.10	10	\$656.26	18%	75%	\$10.56	1,260.14	1,260.14	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	5,212.57	15	\$4,009.89	26%	45%	\$66.24	490.78	490.78	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	173.75	10	\$61.58	17%	50%	\$39.63	18.38	18.38	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1,042.51	10	\$200.49	17%	50%	\$21.51	110.26	110.26	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	398.17	398.17	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1,042.51	15	\$551.36	17%	50%	\$45.54	136.89	136.89	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	New	9,730.13	6	\$1,505.64	26%	45%	\$25.53	613.54	613.54	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	5,897.73	10	\$2,075.36	25%	45%	\$39.35	527.24	527.24	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	193.47	10	\$89.81	10%	50%	\$51.91	172.96	172.96	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	107.48	10	\$31.88	6%	25%	\$33.17	45.64	45.64	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	1,612.23	12	\$394.21	16%	25%	\$24.16	364.13	364.13	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	429.93	10	\$118.60	16%	36%	\$30.85	136.42	136.42	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	35,639.32	10	\$4,432.35	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	52,146.77	15	\$11,979.96	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	49,638.42	10	\$604.92	0%	0%	\$1.36	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	16,857.58	1	\$54.66	0%	0%	\$2.73	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	6,535.02	2	\$14.74	0%	0%	\$0.98	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	3,875.11	15	\$1,853.17	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	10.36	15	\$1.34	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	92.92	15	\$12.00	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	New	2,771.29	10	\$27,712.93	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	15,864.55	15	\$120.71	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	1,148.80	15	\$109.73	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	697.52	15	\$132.46	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	697.52	15	\$416.06	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1,983.07	15	\$434.30	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	3,966.14	15	\$2,094.96	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	3,966.14	15	\$42.01	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	8,817.93	10	\$2,074.12	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	9,132.86	10	\$155.33	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	6,214.90	10	\$673.06	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	2,434.12	10	\$1,380.99	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	1,949.65	10	\$454.90	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	1,949.65	10	\$186.50	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	15,746.31	10	\$1,547.76	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	21.82	5	\$3.19	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	140.56	1	\$5.90	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	457.44	10	\$535.03	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	937.69	10	\$535.03	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	33.99	10	\$535.03	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	71.91	10	\$535.03	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	18.43	10	\$535.03	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	1,612.23	10	\$535.03	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	974.83	10	\$535.03	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	92.37	10	\$535.03	15%	15%	\$14.17	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	1,321.48	3	\$3,192.86	3%	11%	\$78.53	0.41	0.42	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	New	2,708.89	3	\$3,192.86	3%	11%	\$78.53	0.29	0.29	IND_SEM-HVAC-AEG-1

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Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	98.18	3	\$3,192.86	3%	11%	\$78.53	0.17	0.17	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	207.74	3	\$3,192.86	3%	11%	\$78.53	0.35	0.35	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	53.24	3	\$3,192.86	3%	11%	\$78.53	0.09	0.09	IND_SEM-Lighting-AEG-1
Chemical Mfg	Motors	Strategic Energy Management	employee	New	4,657.56	3	\$3,192.86	3%	11%	\$78.53	8.03	8.03	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	New	2,816.16	3	\$3,192.86	3%	11%	\$78.53	4.86	4.86	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	266.85	3	\$3,192.86	3%	11%	\$78.53	0.75	0.53	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	New	239.70	3	\$4,697.58	5%	39%	\$151.19	9.20	9.26	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	61.43	3	\$4,697.58	5%	39%	\$151.19	2.37	2.40	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	New	5,374.11	3	\$4,697.58	5%	39%	\$151.19	353.80	353.80	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	New	3,249.42	3	\$4,697.58	5%	39%	\$151.19	213.92	213.92	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	New	307.90	3	\$4,697.58	5%	39%	\$151.19	12.25	10.17	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	239.70	3	\$2,982.12	0%	0%	\$95.98	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	61.43	3	\$2,982.12	0%	0%	\$95.98	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	New	5,374.11	3	\$2,982.12	0%	0%	\$95.98	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	New	3,249.42	3	\$2,982.12	0%	0%	\$95.98	0.00	0.00	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	307.90	3	\$2,982.12	0%	0%	\$95.98	0.00	0.00	IND_RCX-Process-AEG-1

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Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	886.14	12	\$483.47	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	14,758.09	11	\$11,499.72	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	New	456.67	20	\$251.00	0%	34%	\$25.32	461.78	461.78	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	New	276.12	20	\$251.00	0%	34%	\$25.32	279.21	279.21	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	2,303.13	20	\$949.42	0%	34%	\$18.99	1,833.64	1,833.64	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	New	1,392.57	20	\$949.42	0%	34%	\$18.99	1,108.70	1,108.70	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	255.92	261.26	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	183.25	184.06	Building Energy Simulation Tool

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Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	110.53	111.83	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	99.79	101.87	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	7.75	7.78	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	4.67	4.73	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	1.96	2.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	122.17	122.71	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	73.69	74.55	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	32.18	32.85	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	17.21	17.29	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	10.38	10.50	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	76.19	77.89	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	634.87	649.09	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	308.25	315.16	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	54.64	56.39	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	244.99	252.82	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	2.79	5	\$0.40	18%	30%	\$28.25	298.51	308.06	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	38.45	39.15	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	1,215.04	1,252.02	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	1,685.16	1,696.93	HVLS-Heating-AEG-1
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	88.67	91.96	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	474.49	484.40	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	339.76	341.26	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	204.93	207.33	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	2.12	15	\$0.36	7%	33%	\$16.02	1,047.39	1,115.07	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	2.97	15	\$0.60	7%	33%	\$18.88	1,466.34	1,561.09	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	5.27	5.91	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	203.73	208.94	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	208.62	213.95	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	245.47	258.65	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	357.97	377.20	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	244.71	257.85	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	15,662.51	20	\$5,919.46	15%	20%	\$27.94	489.11	489.11	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	235.67	15	\$259.56	20%	50%	\$94.84	324.00	324.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	377.07	15	\$181.66	20%	50%	\$41.48	518.39	518.39	AEG Research - prior study

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Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	179.21	10	\$28.89	9%	38%	\$18.02	236.03	236.03	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	134.41	12	\$44.02	9%	38%	\$32.37	172.41	172.41	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	134.41	10	\$45.88	9%	38%	\$38.18	172.41	172.41	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	157.71	10	\$17.43	9%	38%	\$12.36	207.71	207.71	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	186.38	10	\$28.84	9%	38%	\$17.30	239.07	239.07	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	286.74	10	\$145.39	9%	38%	\$56.70	367.80	367.80	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	907.84	10	\$74.92	17%	50%	\$9.23	1,394.94	1,394.94	CMPAIR_EQPT-Motors-7PLN-v5-2
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	102.28	102.28	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	6.92	6.92	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	1,037.54	10	\$123.39	9%	15%	\$13.30	280.18	280.18	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	207.51	10	\$53.57	9%	38%	\$28.87	266.17	266.17	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	518.77	10	\$53.85	18%	75%	\$11.61	1,366.47	1,366.47	CMPAIR_LEAK-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	389.08	15	\$329.02	26%	45%	\$72.82	332.71	332.71	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	12.97	10	\$5.05	17%	50%	\$43.57	19.93	19.93	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	77.82	10	\$16.45	17%	50%	\$23.64	119.57	119.57	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	338.43	338.43	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	77.82	15	\$45.24	17%	50%	\$50.06	119.57	119.57	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	726.27	6	\$123.54	26%	45%	\$28.07	621.06	621.06	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,518.68	10	\$587.47	25%	45%	\$43.26	1,367.03	1,367.03	MATHAND_VSD-Material Handling-7PLN-v5-2
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	29.32	10	\$13.61	10%	50%	\$51.91	211.17	211.17	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	16.29	10	\$4.83	6%	25%	\$33.17	55.72	55.72	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	244.37	12	\$59.75	16%	25%	\$24.16	417.94	417.94	2015-mdi-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	65.17	10	\$17.98	16%	36%	\$30.85	240.31	240.31	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	31,136.98	10	\$4,256.87	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	45,559.04	15	\$11,505.67	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,356.26	10	\$604.92	0%	0%	\$49.88	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	14,727.95	1	\$54.66	0%	0%	\$3.13	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	5,709.45	2	\$14.74	0%	0%	\$1.13	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	1,571.11	15	\$825.94	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	20.32	15	\$2.90	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	5.70	15	\$0.81	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	75.72	10	\$832.37	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	472.32	15	\$3.95	15%	75%	\$0.72	1,275.47	1,275.47	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	465.77	15	\$48.91	15%	75%	\$9.04	1,257.76	1,257.76	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	282.80	15	\$59.04	15%	75%	\$17.98	763.68	763.68	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	282.80	15	\$185.43	15%	75%	\$56.46	784.12	784.12	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1

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Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	59.04	15	\$14.21	15%	75%	\$20.73	163.70	163.70	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	118.08	15	\$68.56	15%	75%	\$50.00	327.40	327.40	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	118.08	15	\$1.37	15%	75%	\$1.00	327.40	327.40	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	2,270.65	10	\$587.12	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,351.74	10	\$43.97	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	3,044.92	10	\$362.50	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	755.56	10	\$428.67	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	605.18	10	\$141.20	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	605.18	10	\$57.89	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	4,054.72	10	\$438.12	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	6.77	5	\$0.99	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	36.19	1	\$1.67	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1

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Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	659.39	10	\$362.61	15%	15%	\$14.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	1,422.78	10	\$362.61	15%	15%	\$14.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	53.94	10	\$362.61	15%	15%	\$14.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	84.17	10	\$362.61	15%	15%	\$14.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	19.61	10	\$362.61	15%	15%	\$14.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	195.50	10	\$362.61	15%	15%	\$14.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	302.59	10	\$362.61	15%	15%	\$14.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	90.27	10	\$362.61	15%	15%	\$14.33	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	1,904.90	3	\$2,163.90	3%	11%	\$79.44	243.54	248.63	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	4,110.25	3	\$2,163.90	3%	11%	\$79.44	183.39	184.20	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	155.82	3	\$2,163.90	3%	11%	\$79.44	109.90	111.18	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	243.17	3	\$2,163.90	3%	11%	\$79.44	150.02	160.20	IND_SEM-Lighting-AEG-1

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Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	56.65	3	\$2,163.90	3%	11%	\$79.44	37.98	39.29	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	564.77	3	\$2,163.90	3%	11%	\$79.44	409.35	409.35	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	874.15	3	\$2,163.90	3%	11%	\$79.44	633.59	633.59	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	260.79	3	\$2,163.90	3%	11%	\$79.44	325.97	253.33	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	280.58	3	\$1,055.87	0%	0%	\$132.76	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	65.37	3	\$1,055.87	0%	0%	\$132.76	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	651.65	3	\$1,055.87	0%	0%	\$132.76	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	1,008.64	3	\$1,055.87	0%	0%	\$132.76	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	300.91	3	\$1,055.87	0%	0%	\$132.76	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	280.58	3	\$670.29	5%	39%	\$84.28	346.20	369.70	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	65.37	3	\$670.29	5%	39%	\$84.28	87.65	90.68	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	651.65	3	\$670.29	5%	39%	\$84.28	944.65	944.65	IND_RCX-Motors-AEG-1

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Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	1,008.64	3	\$670.29	5%	39%	\$84.28	1,462.14	1,462.14	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	300.91	3	\$670.29	5%	39%	\$84.28	752.23	584.62	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	24.21	12	\$14.52	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	403.23	11	\$345.40	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	WHP - ORC	employee	Existing	26.25	20	\$14.43	0%	99%	\$18.15	298.10	298.10	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	Existing	32.50	20	\$14.43	0%	99%	\$18.15	461.40	461.40	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	133.00	133.09	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	88.69	88.69	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	52.00	52.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	51.86	51.89	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	3.75	3.75	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	2.20	2.20	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	1.02	1.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	59.13	59.13	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	34.66	34.66	Building Energy Simulation Tool

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Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	16.37	16.38	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	8.16	8.16	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	4.78	4.78	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	15.84	15.84	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	163.90	163.90	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	79.58	79.58	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	15.74	15.74	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	56.84	56.84	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	2.96	5	\$0.40	18%	30%	\$26.31	38.00	38.11	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	10.38	10.38	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	333.57	334.12	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	430.82	430.82	HVLS-Heating-AEG-1

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Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	5.60	5.64	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	81.37	81.48	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	54.26	54.26	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	31.81	31.81	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.79	15	\$0.36	22%	41%	\$17.49	429.17	430.95	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	2.50	15	\$0.60	22%	41%	\$20.61	600.84	603.33	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	1.05	1.06	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	47.43	47.92	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	58.30	58.85	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	45.30	46.11	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	35.88	36.54	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	37.62	38.33	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	17,217.52	20	\$5,919.46	15%	20%	\$25.42	172.48	172.48	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	259.06	15	\$259.56	20%	50%	\$86.27	88.30	88.30	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	414.50	15	\$181.66	20%	50%	\$37.74	141.28	141.28	AEG Research - prior study
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	197.01	10	\$28.89	9%	38%	\$16.40	51.81	51.81	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	147.76	12	\$44.02	9%	38%	\$29.44	58.09	58.09	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	147.76	10	\$45.88	9%	38%	\$34.73	54.60	54.60	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	173.37	10	\$17.43	9%	38%	\$11.24	45.59	45.59	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	204.89	10	\$28.84	9%	38%	\$15.74	75.72	75.72	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	315.21	10	\$145.39	9%	38%	\$51.58	116.49	116.49	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	997.98	10	\$74.92	17%	50%	\$8.40	306.20	306.20	CMPAIR_EQPT-Motors-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	35.91	35.91	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	1.52	1.52	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	1,140.54	10	\$123.39	9%	15%	\$12.10	88.74	88.74	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	228.11	10	\$53.57	9%	38%	\$26.26	84.30	84.30	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	570.27	10	\$53.85	18%	75%	\$10.56	299.96	299.96	CMPAIR_LEAK-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	427.70	15	\$329.02	26%	45%	\$66.24	116.82	116.82	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	14.26	10	\$5.05	17%	50%	\$39.63	4.37	4.37	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	85.54	10	\$16.45	17%	50%	\$21.51	26.25	26.25	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	94.78	94.78	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	85.54	15	\$45.24	17%	50%	\$45.54	32.59	32.59	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	798.38	6	\$123.54	26%	45%	\$25.53	146.04	146.04	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,669.46	10	\$587.47	25%	45%	\$39.35	432.96	432.96	MATHAND_VSD-Material Handling-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	29.32	10	\$13.61	10%	50%	\$51.91	60.84	60.84	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	16.29	10	\$4.83	6%	25%	\$33.17	16.06	16.06	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	244.37	12	\$59.75	16%	25%	\$24.16	128.09	128.09	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	65.17	10	\$17.98	16%	36%	\$30.85	47.99	47.99	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	34,228.34	10	\$4,256.87	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	50,082.26	15	\$11,505.67	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,490.91	10	\$604.92	0%	0%	\$45.37	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	16,190.18	1	\$54.66	0%	0%	\$2.85	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	6,276.30	2	\$14.74	0%	0%	\$1.02	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	1,727.09	15	\$825.94	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	22.33	15	\$2.90	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	6.26	15	\$0.81	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	83.24	10	\$832.37	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	519.22	15	\$3.95	15%	75%	\$0.66	447.84	447.84	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	512.01	15	\$48.91	15%	75%	\$8.22	441.63	441.63	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	310.88	15	\$59.04	15%	75%	\$16.35	268.14	268.14	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	310.88	15	\$185.43	15%	75%	\$51.36	213.69	213.69	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	64.90	15	\$14.21	15%	75%	\$18.86	44.61	44.61	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	129.80	15	\$68.56	15%	75%	\$45.48	89.23	89.23	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	129.80	15	\$1.37	15%	75%	\$0.91	89.23	89.23	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	2,496.08	10	\$587.12	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,585.23	10	\$43.97	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	3,347.22	10	\$362.50	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	755.56	10	\$428.67	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1

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Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	605.18	10	\$141.20	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	605.18	10	\$57.89	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	4,457.29	10	\$438.12	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	6.77	5	\$0.99	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	39.79	1	\$1.67	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	702.18	10	\$362.61	15%	15%	\$14.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	1,439.40	10	\$362.61	15%	15%	\$14.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	52.17	10	\$362.61	15%	15%	\$14.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	71.51	10	\$362.61	15%	15%	\$14.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	18.33	10	\$362.61	15%	15%	\$14.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	195.50	10	\$362.61	15%	15%	\$14.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	302.59	10	\$362.61	15%	15%	\$14.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	88.71	10	\$362.61	15%	15%	\$14.02	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	2,028.53	3	\$2,163.90	3%	11%	\$77.72	15.69	15.73	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	4,158.28	3	\$2,163.90	3%	11%	\$77.72	11.01	11.01	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	150.72	3	\$2,163.90	3%	11%	\$77.72	6.41	6.41	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	206.59	3	\$2,163.90	3%	11%	\$77.72	8.54	8.63	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	52.95	3	\$2,163.90	3%	11%	\$77.72	2.20	2.24	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	564.77	3	\$2,163.90	3%	11%	\$77.72	24.02	24.02	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	874.15	3	\$2,163.90	3%	11%	\$77.72	37.18	37.18	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	256.28	3	\$2,163.90	3%	11%	\$77.72	17.72	12.45	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	238.38	3	\$1,055.87	5%	39%	\$135.26	26.54	26.73	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	61.10	3	\$1,055.87	5%	39%	\$135.26	6.84	6.92	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	New	651.65	3	\$1,055.87	5%	39%	\$135.26	99.59	99.59	IND_SEM-HVAC-AEG-1

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Electronic Equipment Mfg	Process	Commissioning	employee	New	1,008.64	3	\$1,055.87	5%	39%	\$135.26	192.67	192.67	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	295.71	3	\$1,055.87	5%	39%	\$135.26	34.14	28.34	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	238.38	3	\$670.29	0%	0%	\$85.87	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	61.10	3	\$670.29	0%	0%	\$85.87	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	651.65	3	\$670.29	0%	0%	\$85.87	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	1,008.64	3	\$670.29	0%	0%	\$85.87	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	295.71	3	\$670.29	0%	0%	\$85.87	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	26.62	12	\$14.52	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	443.27	11	\$345.40	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

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Electronic Equipment Mfg	Motors	WHP - ORC	employee	New	26.25	20	\$14.43	0%	99%	\$18.15	178.68	178.68	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	New	32.50	20	\$14.43	0%	99%	\$18.15	276.57	276.57	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	46.18	47.14	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	33.06	33.21	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	19.94	20.18	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	18.00	18.38	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	1.40	1.40	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	0.84	0.85	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.35	0.36	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	22.04	22.14	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	13.30	13.45	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	5.81	5.93	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	3.11	3.12	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	1.87	1.90	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	13.75	14.05	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	114.55	117.12	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	55.62	56.86	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	9.86	10.17	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	44.20	45.62	AEG-BEST
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.11	5	\$0.40	18%	30%	\$737.58	53.86	55.58	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	6.94	7.06	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	219.23	225.90	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	304.05	306.18	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	16.00	16.59	RTU_MNT-Cooling-PGE-R2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	85.61	87.40	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	61.30	61.57	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	36.98	37.41	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.08	15	\$0.36	7%	33%	\$418.23	282.02	300.24	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.11	15	\$0.60	7%	33%	\$492.91	394.83	420.34	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	1.42	1.59	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	54.85	56.26	CLTG_DLMpa-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	56.17	57.61	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	66.09	69.64	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	96.38	101.56	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	65.89	69.42	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,445.23	20	\$924.15	15%	20%	\$27.94	89.65	89.65	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	5.83	15	\$6.43	20%	50%	\$94.84	18.83	18.83	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	9.33	15	\$4.50	20%	50%	\$41.48	30.13	30.13	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	59.91	10	\$9.66	9%	38%	\$18.02	185.27	185.27	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	44.93	12	\$14.72	9%	38%	\$32.37	135.33	135.33	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	44.93	10	\$15.34	9%	38%	\$38.18	135.33	135.33	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	76.68	10	\$8.48	9%	38%	\$12.36	237.14	237.14	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	90.62	10	\$14.02	9%	38%	\$17.30	272.95	272.95	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	139.42	10	\$70.69	9%	38%	\$56.70	419.93	419.93	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	207.77	10	\$17.15	17%	50%	\$9.23	749.63	749.63	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	54.96	54.96	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	3.72	3.72	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	237.45	10	\$28.24	9%	15%	\$13.30	150.57	150.57	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	47.49	10	\$12.26	9%	38%	\$28.87	143.04	143.04	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	118.73	10	\$12.32	18%	75%	\$11.61	734.34	734.34	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	89.04	15	\$75.30	26%	45%	\$72.82	178.80	178.80	CMPAIR_VSD-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.97	10	\$1.16	17%	50%	\$43.57	10.71	10.71	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	17.81	10	\$3.77	17%	50%	\$23.64	64.25	64.25	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	181.87	181.87	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	17.81	15	\$10.35	17%	50%	\$50.06	64.25	64.25	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	Existing	166.22	6	\$28.27	26%	45%	\$28.07	333.75	333.75	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	179.98	10	\$69.62	25%	45%	\$43.26	380.42	380.42	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	5.74	10	\$2.66	10%	50%	\$51.91	97.07	97.07	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.19	10	\$0.95	6%	25%	\$33.17	25.62	25.62	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	47.84	12	\$11.70	16%	25%	\$24.16	192.11	192.11	2015-mdu-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	12.76	10	\$3.52	16%	36%	\$30.85	110.46	110.46	DRV_SYNBELT-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	Existing	4,861.11	10	\$664.58	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	Existing	7,112.68	15	\$1,796.27	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	906.74	10	\$604.92	0%	0%	\$74.61	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	2,299.33	1	\$54.66	0%	0%	\$20.04	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	891.36	2	\$14.74	0%	0%	\$7.21	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	38.89	15	\$20.45	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	64.06	15	\$9.13	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	76.92	15	\$10.92	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	Existing	25.31	10	\$278.24	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	21.08	15	\$0.18	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	11.53	15	\$1.21	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	7.00	15	\$1.46	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	7.00	15	\$4.59	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.63	15	\$0.63	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	5.27	15	\$3.06	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	5.27	15	\$0.06	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	269.10	10	\$69.58	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	278.71	10	\$5.21	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1

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Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	178.68	10	\$21.27	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	29.31	10	\$16.63	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	23.47	10	\$5.48	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	23.47	10	\$2.25	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	480.54	10	\$51.92	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	0.26	5	\$0.04	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	4.29	1	\$0.20	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	50.67	10	\$29.90	15%	15%	\$14.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	109.33	10	\$29.90	15%	15%	\$14.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	4.14	10	\$29.90	15%	15%	\$14.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	9.65	10	\$29.90	15%	15%	\$14.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.25	10	\$29.90	15%	15%	\$14.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	38.27	10	\$29.90	15%	15%	\$14.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	11.74	10	\$29.90	15%	15%	\$14.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	7.05	10	\$29.90	15%	15%	\$14.36	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	146.37	3	\$178.44	3%	11%	\$79.59	5.17	5.28	IND_SEM-HVAC-AEG-1

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Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	315.83	3	\$178.44	3%	11%	\$79.59	3.89	3.91	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	11.97	3	\$178.44	3%	11%	\$79.59	2.33	2.36	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	27.88	3	\$178.44	3%	11%	\$79.59	4.75	5.07	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	6.50	3	\$178.44	3%	11%	\$79.59	1.20	1.24	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	110.56	3	\$178.44	3%	11%	\$79.59	22.14	22.14	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	33.91	3	\$178.44	3%	11%	\$79.59	6.79	6.79	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	20.36	3	\$178.44	3%	11%	\$79.59	7.03	5.46	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	32.17	3	\$108.69	0%	0%	\$138.80	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	7.50	3	\$108.69	0%	0%	\$138.80	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	Existing	127.57	3	\$108.69	0%	0%	\$138.80	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	Existing	39.12	3	\$108.69	0%	0%	\$138.80	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	23.49	3	\$108.69	0%	0%	\$138.80	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	32.17	3	\$69.00	5%	39%	\$88.11	93.21	99.54	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	7.50	3	\$69.00	5%	39%	\$88.11	23.60	24.42	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	127.57	3	\$69.00	5%	39%	\$88.11	434.23	434.23	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	Existing	39.12	3	\$69.00	5%	39%	\$88.11	133.17	133.17	IND_RCX-Process-AEG-1

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Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	23.49	3	\$69.00	5%	39%	\$88.11	137.88	107.16	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	8.09	12	\$4.85	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	134.79	11	\$115.46	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	24.00	24.01	Building Energy Simulation Tool

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Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	16.00	16.00	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	9.38	9.38	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	9.36	9.36	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.68	0.68	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.40	0.40	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.18	0.18	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	10.67	10.67	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	6.25	6.25	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	2.95	2.96	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	1.47	1.47	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	0.86	0.86	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	2.86	2.86	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	29.57	29.57	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	14.36	14.36	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	2.84	2.84	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	10.26	10.26	AEG-BEST

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Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.11	5	\$0.40	18%	30%	\$686.91	6.86	6.88	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	1.87	1.87	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	60.19	60.29	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	77.73	77.73	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	1.01	1.02	RTU_MNT-Cooling-PGE-R2-1
Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	14.68	14.70	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	9.79	9.79	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	5.74	5.74	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.07	15	\$0.36	22%	41%	\$456.55	115.54	116.02	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.10	15	\$0.60	22%	41%	\$538.08	161.76	162.43	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.28	0.28	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	12.77	12.90	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	15.70	15.85	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	12.20	12.41	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	9.66	9.84	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	10.13	10.32	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,688.00	20	\$924.15	15%	20%	\$25.42	31.61	31.61	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	6.41	15	\$6.43	20%	50%	\$86.27	5.13	5.13	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	10.26	15	\$4.50	20%	50%	\$37.74	8.21	8.21	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	65.86	10	\$9.66	9%	38%	\$16.40	40.67	40.67	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	49.39	12	\$14.72	9%	38%	\$29.44	45.59	45.59	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	49.39	10	\$15.34	9%	38%	\$34.73	42.86	42.86	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	84.29	10	\$8.48	9%	38%	\$11.24	52.06	52.06	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	99.62	10	\$14.02	9%	38%	\$15.74	86.45	86.45	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	153.26	10	\$70.69	9%	38%	\$51.58	133.00	133.00	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	228.40	10	\$17.15	17%	50%	\$8.40	164.55	164.55	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	19.30	19.30	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1

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Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	0.82	0.82	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	261.03	10	\$28.24	9%	15%	\$12.10	47.69	47.69	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	52.21	10	\$12.26	9%	38%	\$26.26	45.30	45.30	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	130.51	10	\$12.32	18%	75%	\$10.56	161.19	161.19	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	97.88	15	\$75.30	26%	45%	\$66.24	62.78	62.78	CMPAIR_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	3.26	10	\$1.16	17%	50%	\$39.63	2.35	2.35	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	19.58	10	\$3.77	17%	50%	\$21.51	14.10	14.10	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	50.93	50.93	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	19.58	15	\$10.35	17%	50%	\$45.54	17.51	17.51	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	New	182.72	6	\$28.27	26%	45%	\$25.53	78.48	78.48	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	197.85	10	\$69.62	25%	45%	\$39.35	120.49	120.49	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	5.74	10	\$2.66	10%	50%	\$51.91	27.97	27.97	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.19	10	\$0.95	6%	25%	\$33.17	7.38	7.38	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	47.84	12	\$11.70	16%	25%	\$24.16	58.88	58.88	2015-mdu-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	12.76	10	\$3.52	16%	36%	\$30.85	22.06	22.06	DRV_SYNBELT-Motors-7PLN-v5-1

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Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	New	5,343.73	10	\$664.58	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	New	7,818.85	15	\$1,796.27	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	996.76	10	\$604.92	0%	0%	\$67.87	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,527.61	1	\$54.66	0%	0%	\$18.23	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	979.86	2	\$14.74	0%	0%	\$6.56	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	42.75	15	\$20.45	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	70.42	15	\$9.13	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	84.56	15	\$10.92	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	New	27.82	10	\$278.24	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	23.17	15	\$0.18	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	12.67	15	\$1.21	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	7.70	15	\$1.46	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	7.70	15	\$4.59	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.90	15	\$0.63	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	5.79	15	\$3.06	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	5.79	15	\$0.06	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	295.82	10	\$69.58	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	306.38	10	\$5.21	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	196.42	10	\$21.27	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	29.31	10	\$16.63	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	23.47	10	\$5.48	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	23.47	10	\$2.25	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	528.25	10	\$51.92	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	0.26	5	\$0.04	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	4.72	1	\$0.20	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	53.96	10	\$29.90	15%	15%	\$14.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	110.60	10	\$29.90	15%	15%	\$14.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	4.01	10	\$29.90	15%	15%	\$14.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	8.20	10	\$29.90	15%	15%	\$14.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	2.10	10	\$29.90	15%	15%	\$14.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	38.27	10	\$29.90	15%	15%	\$14.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	11.74	10	\$29.90	15%	15%	\$14.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	6.93	10	\$29.90	15%	15%	\$14.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	155.87	3	\$178.44	3%	11%	\$78.06	0.33	0.33	IND_SEM-HVAC-AEG-1
Industrial Machinery	Heating	Strategic Energy Management	employee	New	319.52	3	\$178.44	3%	11%	\$78.06	0.23	0.23	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	11.58	3	\$178.44	3%	11%	\$78.06	0.14	0.14	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	23.69	3	\$178.44	3%	11%	\$78.06	0.27	0.27	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	6.07	3	\$178.44	3%	11%	\$78.06	0.07	0.07	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	New	110.56	3	\$178.44	3%	11%	\$78.06	1.30	1.30	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	New	33.91	3	\$178.44	3%	11%	\$78.06	0.40	0.40	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	20.01	3	\$178.44	3%	11%	\$78.06	0.38	0.27	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	New	27.33	3	\$108.69	5%	39%	\$141.38	7.15	7.20	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	New	7.01	3	\$108.69	5%	39%	\$141.38	1.84	1.86	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	New	127.57	3	\$108.69	5%	39%	\$141.38	45.78	45.78	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	New	39.12	3	\$108.69	5%	39%	\$141.38	17.55	17.55	IND_SEM-Lighting-AEG-1

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Industrial Machinery	Miscellaneous	Commissioning	employee	New	23.08	3	\$108.69	5%	39%	\$141.38	6.26	5.19	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	27.33	3	\$69.00	0%	0%	\$89.75	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	7.01	3	\$69.00	0%	0%	\$89.75	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	New	127.57	3	\$69.00	0%	0%	\$89.75	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	New	39.12	3	\$69.00	0%	0%	\$89.75	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	23.08	3	\$69.00	0%	0%	\$89.75	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	New	8.90	12	\$4.85	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	148.17	11	\$115.46	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Industrial Machinery	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	2.77	2.83	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	1.99	1.99	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	1.20	1.21	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	1.08	1.10	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	0.08	0.08	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	0.05	0.05	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	1.32	1.33	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	0.80	0.81	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	0.35	0.36	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	0.19	0.19	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	0.11	0.11	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	0.83	0.84	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	6.88	7.03	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	3.34	3.41	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	0.59	0.61	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	2.65	2.74	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.09	5	\$0.40	18%	30%	\$886.12	3.23	3.34	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	0.42	0.42	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	13.16	13.56	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	18.26	18.38	HVLS-Heating-AEG-1

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Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	0.96	1.00	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	5.14	5.25	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	3.68	3.70	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	2.22	2.25	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.07	15	\$0.36	7%	33%	\$502.45	40.31	42.92	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.09	15	\$0.60	7%	33%	\$592.18	56.44	60.09	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	0.20	0.23	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	7.84	8.04	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	8.03	8.24	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	9.45	9.96	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	13.78	14.52	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	9.42	9.93	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,322.10	20	\$499.67	15%	20%	\$27.94	16.42	16.42	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	4.75	15	\$5.23	20%	50%	\$94.84	2.60	2.60	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	7.60	15	\$3.66	20%	50%	\$41.48	4.16	4.16	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	204.86	10	\$33.02	9%	38%	\$18.02	107.28	107.28	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	153.65	12	\$50.32	9%	38%	\$32.37	78.36	78.36	PUMP_SYSOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	153.65	10	\$52.45	9%	38%	\$38.18	78.36	78.36	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	83.03	10	\$9.18	9%	38%	\$12.36	43.48	43.48	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	98.12	10	\$15.18	9%	38%	\$17.30	50.04	50.04	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	150.96	10	\$76.54	9%	38%	\$56.70	76.99	76.99	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	135.94	10	\$11.22	17%	50%	\$9.23	83.05	83.05	CMPAIR_EQPT-Motors-7PLN-v5-2

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	6.09	6.09	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	0.41	0.41	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	155.36	10	\$18.48	9%	15%	\$13.30	16.68	16.68	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	31.07	10	\$8.02	9%	38%	\$28.87	15.85	15.85	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	77.68	10	\$8.06	18%	75%	\$11.61	81.36	81.36	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	58.26	15	\$49.27	26%	45%	\$72.82	19.81	19.81	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.94	10	\$0.76	17%	50%	\$43.57	1.19	1.19	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	11.65	10	\$2.46	17%	50%	\$23.64	7.12	7.12	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	20.15	20.15	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	11.65	15	\$6.77	17%	50%	\$50.06	7.12	7.12	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	Existing	108.76	6	\$18.50	26%	45%	\$28.07	36.98	36.98	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	978.52	10	\$378.52	25%	45%	\$43.26	350.22	350.22	MATHAND_VSD-Material Handling-7PLN-v5-2

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Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	13.45	10	\$6.24	10%	50%	\$51.91	48.14	48.14	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	7.47	10	\$2.22	6%	25%	\$33.17	12.70	12.70	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	112.08	12	\$27.40	16%	25%	\$24.16	95.27	95.27	2015-mdi-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	29.89	10	\$8.24	16%	36%	\$30.85	54.78	54.78	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	2,628.33	10	\$359.33	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	3,845.72	15	\$971.21	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,550.37	10	\$604.92	0%	0%	\$43.63	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,243.21	1	\$54.66	0%	0%	\$37.07	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	481.94	2	\$14.74	0%	0%	\$13.33	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	31.67	15	\$16.65	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	85.07	15	\$12.13	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	323.01	15	\$45.87	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	Existing	86.56	10	\$951.50	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	29.45	15	\$0.25	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	9.39	15	\$0.99	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	5.70	15	\$1.19	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	5.70	15	\$3.74	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	3.68	15	\$0.89	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	7.36	15	\$4.28	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	7.36	15	\$0.09	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	1,463.03	10	\$378.29	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,515.28	10	\$28.33	15%	75%	\$2.09	1,626.98	1,626.98	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	384.21	10	\$45.74	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	41.47	10	\$23.53	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1

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Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	33.22	10	\$7.75	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	33.22	10	\$3.18	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	2,612.55	10	\$282.29	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	0.37	5	\$0.05	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	23.32	1	\$1.08	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	17.97	10	\$26.18	15%	15%	\$14.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	38.77	10	\$26.18	15%	15%	\$14.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	1.47	10	\$26.18	15%	15%	\$14.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	8.15	10	\$26.18	15%	15%	\$14.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.90	10	\$26.18	15%	15%	\$14.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	112.08	10	\$26.18	15%	15%	\$14.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	16.61	10	\$26.18	15%	15%	\$14.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	7.62	10	\$26.18	15%	15%	\$14.22	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	51.90	3	\$156.21	3%	11%	\$78.83	3.26	3.33	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	111.99	3	\$156.21	3%	11%	\$78.83	2.45	2.47	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	4.25	3	\$156.21	3%	11%	\$78.83	1.47	1.49	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	23.54	3	\$156.21	3%	11%	\$78.83	7.13	7.62	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	5.48	3	\$156.21	3%	11%	\$78.83	1.81	1.87	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	323.78	3	\$156.21	3%	11%	\$78.83	115.27	115.27	IND_SEM-Motors-AEG-1
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	47.98	3	\$156.21	3%	11%	\$78.83	17.08	17.08	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	22.01	3	\$156.21	3%	11%	\$78.83	13.51	10.50	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	27.17	3	\$242.46	0%	0%	\$147.21	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	6.33	3	\$242.46	0%	0%	\$147.21	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	Existing	373.59	3	\$242.46	0%	0%	\$147.21	0.00	0.00	IND_SEM-HVAC-AEG-1

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Lumber Wood Products	Process	Commissioning	employee	Existing	55.36	3	\$242.46	0%	0%	\$147.21	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	25.40	3	\$242.46	0%	0%	\$147.21	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	27.17	3	\$153.92	10%	35%	\$93.45	9.80	10.46	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	6.33	3	\$153.92	10%	35%	\$93.45	2.48	2.57	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	373.59	3	\$153.92	10%	35%	\$93.45	158.33	158.33	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	Existing	55.36	3	\$153.92	10%	35%	\$93.45	23.46	23.46	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	25.40	3	\$153.92	10%	35%	\$93.45	18.56	14.43	IND_RCX-Process-AEG-1
Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	27.68	12	\$16.60	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	460.94	11	\$394.83	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

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Lumber Wood Products	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	1.44	1.44	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	0.96	0.96	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	0.56	0.56	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	0.56	0.56	Building Energy Simulation Tool

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Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.04	0.04	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	0.64	0.64	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	0.38	0.38	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	0.18	0.18	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	0.09	0.09	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	0.05	0.05	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	0.17	0.17	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	1.78	1.78	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	0.86	0.86	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	0.17	0.17	CHLR_VSPMP-Cooling-SCE-17_R0-86

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Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	0.62	0.62	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.09	5	\$0.40	18%	30%	\$825.25	0.41	0.41	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	0.11	0.11	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	3.61	3.62	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	4.67	4.67	HVLS-Heating-AEG-1
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	0.06	0.06	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	0.88	0.88	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	0.59	0.59	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	0.34	0.34	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.36	22%	41%	\$548.50	16.52	16.59	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.08	15	\$0.60	22%	41%	\$646.44	23.13	23.23	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.04	0.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	1.83	1.84	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	2.24	2.27	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	1.74	1.78	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	1.38	1.41	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	1.45	1.48	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,453.36	20	\$499.67	15%	20%	\$25.42	5.79	5.79	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	5.22	15	\$5.23	20%	50%	\$86.27	0.71	0.71	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	8.36	15	\$3.66	20%	50%	\$37.74	1.13	1.13	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	225.20	10	\$33.02	9%	38%	\$16.40	23.55	23.55	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	168.90	12	\$50.32	9%	38%	\$29.44	26.40	26.40	PUMP_SYSOPT-Motors-UN-v1.0-5

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Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	168.90	10	\$52.45	9%	38%	\$34.73	24.82	24.82	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	91.27	10	\$9.18	9%	38%	\$11.24	9.54	9.54	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	107.87	10	\$15.18	9%	38%	\$15.74	15.85	15.85	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	165.95	10	\$76.54	9%	38%	\$51.58	24.38	24.38	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	149.44	10	\$11.22	17%	50%	\$8.40	18.23	18.23	CMPAIR_EQPT-Motors-7PLN-v5-2
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	2.14	2.14	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	0.09	0.09	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	170.79	10	\$18.48	9%	15%	\$12.10	5.28	5.28	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	34.16	10	\$8.02	9%	38%	\$26.26	5.02	5.02	CMPAIR_SYCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	85.39	10	\$8.06	18%	75%	\$10.56	17.86	17.86	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	64.05	15	\$49.27	26%	45%	\$66.24	6.96	6.96	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.13	10	\$0.76	17%	50%	\$39.63	0.26	0.26	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1

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Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	12.81	10	\$2.46	17%	50%	\$21.51	1.56	1.56	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	5.64	5.64	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	12.81	15	\$6.77	17%	50%	\$45.54	1.94	1.94	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	New	119.55	6	\$18.50	26%	45%	\$25.53	8.70	8.70	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	1,075.67	10	\$378.52	25%	45%	\$39.35	110.92	110.92	MATHAND_VSD-Material Handling-7PLN-v5-2
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	13.45	10	\$6.24	10%	50%	\$51.91	13.87	13.87	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	7.47	10	\$2.22	6%	25%	\$33.17	3.66	3.66	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	112.08	12	\$27.40	16%	25%	\$24.16	29.20	29.20	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	29.89	10	\$8.24	16%	36%	\$30.85	10.94	10.94	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	New	2,889.27	10	\$359.33	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	New	4,227.53	15	\$971.21	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,704.30	10	\$604.92	0%	0%	\$39.69	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1

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Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,366.64	1	\$54.66	0%	0%	\$33.72	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	529.79	2	\$14.74	0%	0%	\$12.13	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	34.82	15	\$16.65	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	93.51	15	\$12.13	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	355.08	15	\$45.87	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	New	95.15	10	\$951.50	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	32.38	15	\$0.25	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	10.32	15	\$0.99	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	6.27	15	\$1.19	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	6.27	15	\$3.74	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	4.05	15	\$0.89	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	8.09	15	\$4.28	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	8.09	15	\$0.09	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	1,608.28	10	\$378.29	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,665.72	10	\$28.33	15%	75%	\$1.90	515.29	515.29	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	422.36	10	\$45.74	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	41.47	10	\$23.53	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	33.22	10	\$7.75	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	33.22	10	\$3.18	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	2,871.93	10	\$282.29	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	0.37	5	\$0.05	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	25.64	1	\$1.08	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	19.13	10	\$26.18	15%	15%	\$14.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	39.22	10	\$26.18	15%	15%	\$14.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	1.42	10	\$26.18	15%	15%	\$14.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	6.92	10	\$26.18	15%	15%	\$14.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	1.77	10	\$26.18	15%	15%	\$14.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	112.08	10	\$26.18	15%	15%	\$14.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	16.61	10	\$26.18	15%	15%	\$14.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	7.49	10	\$26.18	15%	15%	\$14.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	55.27	3	\$156.21	3%	11%	\$78.50	0.21	0.21	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	113.30	3	\$156.21	3%	11%	\$78.50	0.15	0.15	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	4.11	3	\$156.21	3%	11%	\$78.50	0.09	0.09	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	20.00	3	\$156.21	3%	11%	\$78.50	0.41	0.41	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	5.13	3	\$156.21	3%	11%	\$78.50	0.10	0.11	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	New	323.78	3	\$156.21	3%	11%	\$78.50	6.76	6.76	IND_SEM-Motors-AEG-1

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Lumber Wood Products	Process	Strategic Energy Management	employee	New	47.98	3	\$156.21	3%	11%	\$78.50	1.00	1.00	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	21.63	3	\$156.21	3%	11%	\$78.50	0.73	0.52	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	23.08	3	\$242.46	10%	35%	\$148.42	0.75	0.76	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	5.92	3	\$242.46	10%	35%	\$148.42	0.19	0.20	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	New	373.59	3	\$242.46	10%	35%	\$148.42	20.86	20.86	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Process	Commissioning	employee	New	55.36	3	\$242.46	10%	35%	\$148.42	3.09	3.09	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	24.96	3	\$242.46	10%	35%	\$148.42	0.84	0.70	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	23.08	3	\$153.92	0%	0%	\$94.22	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	5.92	3	\$153.92	0%	0%	\$94.22	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	New	373.59	3	\$153.92	0%	0%	\$94.22	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	New	55.36	3	\$153.92	0%	0%	\$94.22	0.00	0.00	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	24.96	3	\$153.92	0%	0%	\$94.22	0.00	0.00	IND_RCX-Process-AEG-1

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Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	30.42	12	\$16.60	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	506.71	11	\$394.83	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Lumber Wood Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	61.75	63.04	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	44.22	44.41	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	26.67	26.98	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	24.08	24.58	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	1.87	1.88	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	1.13	1.14	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	0.47	0.48	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	29.48	29.61	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	17.78	17.99	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	7.76	7.93	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	4.15	4.17	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	2.50	2.53	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	18.38	18.79	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	153.18	156.61	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	74.38	76.04	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	13.18	13.60	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	59.11	61.00	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.47	5	\$0.40	18%	30%	\$167.02	72.02	74.33	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	9.28	9.45	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	293.17	302.09	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	406.60	409.44	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	21.39	22.19	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	114.48	116.88	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	81.98	82.34	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	49.45	50.03	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.36	15	\$0.36	7%	33%	\$94.70	557.65	593.69	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.50	15	\$0.60	7%	33%	\$111.61	780.72	831.16	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	2.81	3.15	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	108.47	111.24	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	111.07	113.91	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	130.69	137.71	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	190.58	200.82	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	130.28	137.28	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	4,818.03	20	\$1,820.92	15%	20%	\$27.94	144.81	144.81	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	26.65	15	\$29.35	20%	50%	\$94.84	70.52	70.52	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	42.63	15	\$20.54	20%	50%	\$41.48	112.83	112.83	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	276.39	10	\$44.55	9%	38%	\$18.02	700.71	700.71	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	207.29	12	\$67.89	9%	38%	\$32.37	511.83	511.83	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	207.29	10	\$70.76	9%	38%	\$38.18	511.83	511.83	PUMP_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	72.60	10	\$8.02	9%	38%	\$12.36	184.06	184.06	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	85.80	10	\$13.28	9%	38%	\$17.30	211.86	211.86	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	132.01	10	\$66.93	9%	38%	\$56.70	325.94	325.94	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	488.61	10	\$40.32	17%	50%	\$9.23	1,445.17	1,445.17	CMPAIR_EQPT-Motors-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	105.96	105.96	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	7.17	7.17	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	558.41	10	\$66.41	9%	15%	\$13.30	290.27	290.27	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	111.68	10	\$28.83	9%	38%	\$28.87	275.75	275.75	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	279.21	10	\$28.98	18%	75%	\$11.61	1,415.68	1,415.68	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	209.40	15	\$177.08	26%	45%	\$72.82	344.69	344.69	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	6.98	10	\$2.72	17%	50%	\$43.57	20.65	20.65	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	41.88	10	\$8.85	17%	50%	\$23.64	123.87	123.87	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	350.62	350.62	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	41.88	15	\$24.35	17%	50%	\$50.06	123.87	123.87	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	390.89	6	\$66.49	26%	45%	\$28.07	643.42	643.42	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,262.73	10	\$488.46	25%	45%	\$43.26	2,187.92	2,187.92	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	18.63	10	\$8.65	10%	50%	\$51.91	322.89	322.89	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	10.35	10	\$3.07	6%	25%	\$33.17	85.21	85.21	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	155.29	12	\$37.97	16%	25%	\$24.16	639.05	639.05	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	41.41	10	\$11.42	16%	36%	\$30.85	367.45	367.45	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	9,578.22	10	\$1,309.48	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	14,014.66	15	\$3,539.32	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	4,183.37	10	\$604.92	0%	0%	\$16.17	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	4,530.55	1	\$54.66	0%	0%	\$10.17	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	1,756.31	2	\$14.74	0%	0%	\$3.66	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	177.64	15	\$93.39	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	27.64	15	\$3.94	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	77.70	15	\$11.03	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	116.78	10	\$1,283.72	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	270.60	15	\$2.26	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	52.66	15	\$5.53	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	31.98	15	\$6.68	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	31.98	15	\$20.97	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	33.83	15	\$8.14	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	67.65	15	\$39.28	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	67.65	15	\$0.79	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,887.96	10	\$488.17	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,955.38	10	\$36.56	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,808.04	10	\$215.25	15%	75%	\$13.31	8,903.17	8,903.17	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	234.92	10	\$133.28	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	188.16	10	\$43.90	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	188.16	10	\$18.00	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	3,371.35	10	\$364.28	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	2.11	5	\$0.31	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	30.09	1	\$1.39	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	82.65	10	\$71.79	15%	15%	\$14.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	178.34	10	\$71.79	15%	15%	\$14.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	6.76	10	\$71.79	15%	15%	\$14.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	23.28	10	\$71.79	15%	15%	\$14.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	5.42	10	\$71.79	15%	15%	\$14.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	155.29	10	\$71.79	15%	15%	\$14.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	94.08	10	\$71.79	15%	15%	\$14.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	13.88	10	\$71.79	15%	15%	\$14.35	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	238.77	3	\$428.39	3%	11%	\$79.54	6.91	7.06	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	515.21	3	\$428.39	3%	11%	\$79.54	5.21	5.23	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	19.53	3	\$428.39	3%	11%	\$79.54	3.12	3.16	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	67.26	3	\$428.39	3%	11%	\$79.54	9.40	10.03	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	15.67	3	\$428.39	3%	11%	\$79.54	2.38	2.46	IND_SEM-Lighting-AEG-1
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	448.62	3	\$428.39	3%	11%	\$79.54	73.64	73.64	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	Existing	271.79	3	\$428.39	3%	11%	\$79.54	44.61	44.61	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	40.11	3	\$428.39	3%	11%	\$79.54	11.35	8.82	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	77.60	3	\$486.55	0%	0%	\$148.70	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	18.08	3	\$486.55	0%	0%	\$148.70	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	Existing	517.64	3	\$486.55	0%	0%	\$148.70	0.00	0.00	IND_SEM-HVAC-AEG-1

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Metal Mfg	Process	Commissioning	employee	Existing	313.60	3	\$486.55	0%	0%	\$148.70	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	46.28	3	\$486.55	0%	0%	\$148.70	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	77.60	3	\$308.87	5%	39%	\$94.40	184.32	196.83	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	18.08	3	\$308.87	5%	39%	\$94.40	46.66	48.28	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	Existing	517.64	3	\$308.87	5%	39%	\$94.40	1,444.41	1,444.41	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	Existing	313.60	3	\$308.87	5%	39%	\$94.40	875.07	875.07	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	46.28	3	\$308.87	5%	39%	\$94.40	222.71	173.09	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	37.34	12	\$22.40	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	621.88	11	\$532.69	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	Existing	238.99	20	\$131.36	0%	67%	\$25.30	4,415.20	4,415.20	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	Existing	144.79	20	\$131.36	0%	67%	\$25.30	2,674.86	2,674.86	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	377.46	20	\$155.60	0%	20%	\$18.98	2,196.68	2,196.68	WHP Analysis

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Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	228.67	20	\$155.60	0%	20%	\$18.98	1,330.81	1,330.81	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	32.09	32.11	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	21.40	21.40	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	12.55	12.55	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	12.51	12.52	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	0.91	0.91	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	0.53	0.53	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	0.25	0.25	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	14.27	14.27	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	8.36	8.36	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	3.95	3.95	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	1.97	1.97	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	1.15	1.15	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	3.82	3.82	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	39.55	39.55	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	19.20	19.20	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	3.80	3.80	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	13.71	13.71	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.50	5	\$0.40	18%	30%	\$155.54	9.17	9.20	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	2.50	2.50	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	80.48	80.62	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	103.95	103.95	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	1.35	1.36	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	19.63	19.66	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	13.09	13.09	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	7.68	7.68	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.30	15	\$0.36	22%	41%	\$103.38	228.47	229.42	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.42	15	\$0.60	22%	41%	\$121.84	319.86	321.19	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	0.56	0.56	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	25.25	25.51	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	31.04	31.33	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	24.12	24.55	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	19.10	19.45	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	20.03	20.41	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	5,296.37	20	\$1,820.92	15%	20%	\$25.42	51.07	51.07	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	29.29	15	\$29.35	20%	50%	\$86.27	19.22	19.22	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	46.87	15	\$20.54	20%	50%	\$37.74	30.75	30.75	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	303.83	10	\$44.55	9%	38%	\$16.40	153.81	153.81	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	227.88	12	\$67.89	9%	38%	\$29.44	172.44	172.44	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	227.88	10	\$70.76	9%	38%	\$34.73	162.10	162.10	PUMP_VSD-Motors-UN-v1.0-3

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Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	79.81	10	\$8.02	9%	38%	\$11.24	40.40	40.40	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	94.32	10	\$13.28	9%	38%	\$15.74	67.10	67.10	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	145.11	10	\$66.93	9%	38%	\$51.58	103.23	103.23	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	537.12	10	\$40.32	17%	50%	\$8.40	317.23	317.23	CMPAIR_EQPT-Motors-7PLN-v5-2
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	37.21	37.21	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	1.57	1.57	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	613.85	10	\$66.41	9%	15%	\$12.10	91.93	91.93	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	122.77	10	\$28.83	9%	38%	\$26.26	87.34	87.34	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	306.93	10	\$28.98	18%	75%	\$10.56	310.76	310.76	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	230.19	15	\$177.08	26%	45%	\$66.24	121.03	121.03	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	7.67	10	\$2.72	17%	50%	\$39.63	4.53	4.53	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	46.04	10	\$8.85	17%	50%	\$21.51	27.19	27.19	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	98.19	98.19	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	46.04	15	\$24.35	17%	50%	\$45.54	33.76	33.76	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	New	429.70	6	\$66.49	26%	45%	\$25.53	151.30	151.30	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,388.09	10	\$488.46	25%	45%	\$39.35	692.95	692.95	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	18.63	10	\$8.65	10%	50%	\$51.91	93.03	93.03	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	10.35	10	\$3.07	6%	25%	\$33.17	24.55	24.55	MTR_GRWND>100HP-Motors-7PLN-v5-25
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	155.29	12	\$37.97	16%	25%	\$24.16	195.86	195.86	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	41.41	10	\$11.42	16%	36%	\$30.85	73.37	73.37	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	10,529.16	10	\$1,309.48	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	15,406.07	15	\$3,539.32	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	4,598.71	10	\$604.92	0%	0%	\$14.71	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	4,980.35	1	\$54.66	0%	0%	\$9.25	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	1,930.69	2	\$14.74	0%	0%	\$3.33	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	195.28	15	\$93.39	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.38	15	\$3.94	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	85.41	15	\$11.03	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	New	128.37	10	\$1,283.72	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	297.47	15	\$2.26	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	57.89	15	\$5.53	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	35.15	15	\$6.68	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	35.15	15	\$20.97	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	37.18	15	\$8.14	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	74.37	15	\$39.28	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	74.37	15	\$0.79	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	2,075.40	10	\$488.17	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,149.52	10	\$36.56	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	1,987.54	10	\$215.25	15%	75%	\$12.11	3,285.81	3,285.81	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	234.92	10	\$133.28	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	188.16	10	\$43.90	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	188.16	10	\$18.00	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	3,706.07	10	\$364.28	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	2.11	5	\$0.31	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	33.08	1	\$1.39	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	88.02	10	\$71.79	15%	15%	\$14.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	180.42	10	\$71.79	15%	15%	\$14.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	6.54	10	\$71.79	15%	15%	\$14.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	19.78	10	\$71.79	15%	15%	\$14.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	5.07	10	\$71.79	15%	15%	\$14.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	155.29	10	\$71.79	15%	15%	\$14.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	New	94.08	10	\$71.79	15%	15%	\$14.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	13.64	10	\$71.79	15%	15%	\$14.18	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	New	254.27	3	\$428.39	3%	11%	\$78.60	0.45	0.45	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	New	521.23	3	\$428.39	3%	11%	\$78.60	0.31	0.31	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	18.89	3	\$428.39	3%	11%	\$78.60	0.18	0.18	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	57.14	3	\$428.39	3%	11%	\$78.60	0.53	0.54	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	14.64	3	\$428.39	3%	11%	\$78.60	0.14	0.14	IND_SEM-Lighting-AEG-1

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Metal Mfg	Motors	Strategic Energy Management	employee	New	448.62	3	\$428.39	3%	11%	\$78.60	4.32	4.32	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	New	271.79	3	\$428.39	3%	11%	\$78.60	2.62	2.62	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	39.42	3	\$428.39	3%	11%	\$78.60	0.62	0.43	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	New	65.93	3	\$486.55	5%	39%	\$150.17	14.13	14.23	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	New	16.90	3	\$486.55	5%	39%	\$150.17	3.64	3.69	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	New	517.64	3	\$486.55	5%	39%	\$150.17	190.35	190.35	IND_SEM-HVAC-AEG-1
Metal Mfg	Process	Commissioning	employee	New	313.60	3	\$486.55	5%	39%	\$150.17	115.32	115.32	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	New	45.48	3	\$486.55	5%	39%	\$150.17	10.11	8.39	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	65.93	3	\$308.87	0%	0%	\$95.33	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	16.90	3	\$308.87	0%	0%	\$95.33	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	New	517.64	3	\$308.87	0%	0%	\$95.33	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	New	313.60	3	\$308.87	0%	0%	\$95.33	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	45.48	3	\$308.87	0%	0%	\$95.33	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	41.05	12	\$22.40	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	683.63	11	\$532.69	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	New	238.99	20	\$131.36	0%	67%	\$25.30	2,646.48	2,646.48	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	New	144.79	20	\$131.36	0%	67%	\$25.30	1,603.32	1,603.32	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	377.46	20	\$155.60	0%	20%	\$18.98	984.41	984.41	WHP Analysis
Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	New	228.67	20	\$155.60	0%	20%	\$18.98	596.38	596.38	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.19	45	\$0.84	15%	25%	\$81.10	392.75	400.96	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.39	45	\$0.84	15%	25%	\$81.10	281.23	282.47	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$81.10	169.63	171.62	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.07	20	\$0.86	15%	25%	\$704.32	153.14	156.34	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$704.32	11.89	11.95	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$704.32	7.17	7.26	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$33.92	3.01	3.07	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.53	45	\$0.32	45%	50%	\$33.92	187.49	188.31	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$33.92	113.09	114.41	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.48	49.38	50.41	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.48	26.41	26.53	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.48	15.93	16.12	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.07	10	\$0.01	15%	45%	\$17.00	116.92	119.54	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.37	15	\$0.37	15%	60%	\$88.89	974.31	996.14	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.13	15	\$0.04	15%	75%	\$25.97	473.07	483.66	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.06	15	\$0.37	15%	60%	\$536.38	83.85	86.53	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.28	10	\$0.02	15%	60%	\$8.09	375.98	388.00	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.11	5	\$0.40	18%	30%	\$707.40	458.11	472.77	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$8,418.04	59.00	60.09	VENT_DCV-Ventilation-7PLN-v5-5
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.24	15	\$0.65	15%	50%	\$46.66	1,864.69	1,921.45	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	0.96	15	\$0.65	15%	50%	\$46.66	2,586.16	2,604.24	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,286.71	136.08	141.13	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.36	5	\$0.75	5%	15%	\$130.78	728.18	743.40	STAT_WIFI-All-7PLN-v2-1

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Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.73	5	\$0.75	5%	15%	\$130.78	521.42	523.71	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$130.78	314.51	318.19	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.08	15	\$0.36	7%	33%	\$401.11	2,581.75	2,748.57	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.12	15	\$0.60	7%	33%	\$472.74	3,614.45	3,847.99	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$9.98	13.00	14.57	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.04	11	\$0.00	15%	50%	\$6.69	502.16	514.99	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.04	16	\$1.87	5%	40%	\$3,647.59	514.20	527.35	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.06	9	\$0.04	15%	25%	\$73.57	605.03	637.53	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.03	8	\$0.02	33%	60%	\$82.95	882.33	929.71	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.04	7	\$1.22	15%	30%	\$4,509.54	603.15	635.55	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	8,086.78	20	\$3,056.31	15%	20%	\$27.94	644.69	644.69	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	89.81	15	\$98.91	20%	50%	\$94.84	315.19	315.19	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	143.69	15	\$69.23	20%	50%	\$41.48	504.31	504.31	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	629.96	10	\$101.54	9%	38%	\$18.02	2,118.10	2,118.10	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	472.47	12	\$154.74	9%	38%	\$32.37	1,547.16	1,547.16	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	472.47	10	\$161.29	9%	38%	\$38.18	1,547.16	1,547.16	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	229.70	10	\$25.39	9%	38%	\$12.36	772.31	772.31	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	271.46	10	\$42.00	9%	38%	\$17.30	888.94	888.94	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	417.64	10	\$211.75	9%	38%	\$56.70	1,367.59	1,367.59	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	772.42	10	\$63.74	17%	50%	\$9.23	3,029.95	3,029.95	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	48.21	15	\$94.84	16%	38%	\$169.38	222.16	222.16	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	4.77	10	\$20.84	16%	30%	\$488.83	15.04	15.04	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	882.77	10	\$104.99	9%	15%	\$13.30	608.57	608.57	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	176.55	10	\$45.58	9%	38%	\$28.87	578.14	578.14	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	441.39	10	\$45.82	18%	75%	\$11.61	2,968.11	2,968.11	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	331.04	15	\$279.94	26%	45%	\$72.82	722.68	722.68	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	11.03	10	\$4.30	17%	50%	\$43.57	43.28	43.28	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1

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Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	66.21	10	\$14.00	17%	50%	\$23.64	259.71	259.71	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	99.88	20	\$5.21	17%	50%	\$3.86	735.10	735.10	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	66.21	15	\$38.49	17%	50%	\$50.06	259.71	259.71	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	617.94	6	\$105.11	26%	45%	\$28.07	1,349.00	1,349.00	CMPAIR_ENDUSEOPT-Motors-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,102.63	10	\$426.53	25%	45%	\$43.26	2,533.80	2,533.80	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	25.54	10	\$11.85	10%	50%	\$51.91	586.86	586.86	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	14.19	10	\$4.21	6%	25%	\$33.17	154.87	154.87	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	212.82	12	\$52.04	16%	25%	\$24.16	1,161.50	1,161.50	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	56.75	10	\$15.65	16%	36%	\$30.85	667.85	667.85	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	16,076.48	10	\$2,197.89	0%	0%	\$15.29	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	23,522.80	15	\$5,940.55	0%	0%	\$21.75	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	4,767.43	10	\$604.92	0%	0%	\$14.19	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	7,604.26	1	\$54.66	0%	0%	\$6.06	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,947.87	2	\$14.74	0%	0%	\$2.18	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	598.71	15	\$314.74	0%	0%	\$45.27	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	27.53	15	\$3.92	0%	0%	\$12.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	52.54	15	\$7.46	0%	0%	\$12.23	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	266.16	10	\$2,925.89	0%	0%	\$1,229.32	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	184.38	15	\$1.54	0%	0%	\$0.72	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	177.49	15	\$18.64	0%	0%	\$9.04	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	107.77	15	\$22.50	0%	0%	\$17.98	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	107.77	15	\$70.66	0%	0%	\$56.46	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	23.05	15	\$5.55	0%	0%	\$20.73	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	46.09	15	\$26.76	0%	0%	\$50.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	46.09	15	\$0.54	0%	0%	\$1.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,648.58	10	\$426.27	0%	0%	\$28.92	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,707.46	10	\$31.92	0%	0%	\$2.09	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,052.29	10	\$244.33	0%	0%	\$13.31	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	296.52	10	\$168.23	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	237.50	10	\$55.41	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	237.50	10	\$22.72	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	2,943.89	10	\$318.10	0%	0%	\$12.08	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	2.66	5	\$0.39	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	26.28	1	\$1.21	0%	0%	\$38.94	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	396.39	10	\$226.26	15%	15%	\$14.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	855.30	10	\$226.26	15%	15%	\$14.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	32.42	10	\$226.26	15%	15%	\$14.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	81.27	10	\$226.26	15%	15%	\$14.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	18.93	10	\$226.26	15%	15%	\$14.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	212.82	10	\$226.26	15%	15%	\$14.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	118.75	10	\$226.26	15%	15%	\$14.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	46.61	10	\$226.26	15%	15%	\$14.40	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	1,145.13	3	\$1,350.25	3%	11%	\$79.82	43.97	44.89	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	2,470.87	3	\$1,350.25	3%	11%	\$79.82	33.11	33.26	IND_SEM-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	93.67	3	\$1,350.25	3%	11%	\$79.82	19.84	20.07	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	234.77	3	\$1,350.25	3%	11%	\$79.82	43.50	46.45	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	54.69	3	\$1,350.25	3%	11%	\$79.82	11.01	11.39	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	614.81	3	\$1,350.25	3%	11%	\$79.82	133.84	133.84	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	343.05	3	\$1,350.25	3%	11%	\$79.82	74.68	74.68	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	134.65	3	\$1,350.25	3%	11%	\$79.82	50.55	39.28	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	270.89	3	\$759.18	0%	0%	\$140.42	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	63.11	3	\$759.18	0%	0%	\$140.42	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	Existing	709.40	3	\$759.18	0%	0%	\$140.42	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	Existing	395.83	3	\$759.18	0%	0%	\$140.42	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	155.36	3	\$759.18	0%	0%	\$140.42	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	270.89	3	\$481.94	5%	39%	\$89.14	853.31	911.23	IND_RCX-Motors-AEG-1
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	63.11	3	\$481.94	5%	39%	\$89.14	216.03	223.51	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	709.40	3	\$481.94	5%	39%	\$89.14	2,625.30	2,625.30	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	Existing	395.83	3	\$481.94	5%	39%	\$89.14	1,464.87	1,464.87	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	155.36	3	\$481.94	5%	39%	\$89.14	991.52	770.58	IND_RCX-Process-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	85.11	12	\$51.04	0%	0%	\$59.27	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	46,581.25	12	\$14,678.85	0%	0%	\$31.14	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,417.42	11	\$1,214.12	0%	0%	\$89.69	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	Existing	326.48	20	\$179.45	0%	26%	\$26.08	3,144.41	3,144.41	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	Existing	182.17	20	\$179.45	0%	26%	\$26.08	1,754.53	1,754.53	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.20	45	\$0.84	15%	25%	\$78.24	204.11	204.25	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.40	45	\$0.84	15%	25%	\$78.24	136.11	136.11	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.01	45	\$0.84	15%	25%	\$78.24	79.80	79.80	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.08	20	\$0.86	15%	25%	\$660.17	79.59	79.64	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$660.17	5.76	5.76	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$660.17	3.37	3.37	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$33.33	1.57	1.57	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.53	45	\$0.32	45%	50%	\$33.33	90.74	90.74	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$33.33	53.20	53.20	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.42	25.13	25.14	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.42	12.52	12.52	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.42	7.34	7.34	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.07	10	\$0.01	15%	45%	\$16.55	24.31	24.31	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.37	15	\$0.37	15%	60%	\$86.51	251.53	251.53	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.14	15	\$0.04	15%	75%	\$25.27	122.13	122.13	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.07	15	\$0.37	15%	60%	\$470.63	24.15	24.15	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.31	10	\$0.02	15%	60%	\$7.10	87.23	87.23	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.12	5	\$0.40	18%	30%	\$658.81	58.32	58.49	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$7,815.24	15.93	15.93	VENT_DCV-Ventilation-7PLN-v5-5

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Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.26	15	\$0.65	15%	50%	\$45.28	511.92	512.76	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	0.97	15	\$0.65	15%	50%	\$45.28	661.17	661.17	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,072.83	8.60	8.66	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.38	5	\$0.75	5%	15%	\$126.16	124.87	125.04	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.74	5	\$0.75	5%	15%	\$126.16	83.27	83.27	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$126.16	48.82	48.82	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.07	15	\$0.36	22%	41%	\$437.87	1,057.73	1,062.10	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.10	15	\$0.60	22%	41%	\$516.06	1,480.82	1,486.94	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$10.86	2.58	2.60	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$6.15	116.91	118.12	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$3,351.84	143.69	145.06	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$76.04	111.65	113.65	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$85.73	88.44	90.05	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$4,660.73	92.74	94.47	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	8,889.66	20	\$3,056.31	15%	20%	\$25.42	227.34	227.34	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	98.72	15	\$98.91	20%	50%	\$86.27	85.90	85.90	RFG_FHPC-Refrigeration-RTF-v1.3-23
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	157.96	15	\$69.23	20%	50%	\$37.74	137.44	137.44	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	692.51	10	\$101.54	9%	38%	\$16.40	464.95	464.95	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	519.38	12	\$154.74	9%	38%	\$29.44	521.25	521.25	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	519.38	10	\$161.29	9%	38%	\$34.73	490.01	490.01	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	252.51	10	\$25.39	9%	38%	\$11.24	169.53	169.53	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	298.42	10	\$42.00	9%	38%	\$15.74	281.54	281.54	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	459.10	10	\$211.75	9%	38%	\$51.58	433.14	433.14	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	849.11	10	\$63.74	17%	50%	\$8.40	665.11	665.11	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$154.08	78.00	78.00	CMPAIR_HTCPDES DRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$444.68	3.30	3.30	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1

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Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	970.41	10	\$104.99	9%	15%	\$12.10	192.74	192.74	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	194.08	10	\$45.58	9%	38%	\$26.26	183.11	183.11	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	485.21	10	\$45.82	18%	75%	\$10.56	651.53	651.53	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	363.91	15	\$279.94	26%	45%	\$66.24	253.75	253.75	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	12.13	10	\$4.30	17%	50%	\$39.63	9.50	9.50	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	72.78	10	\$14.00	17%	50%	\$21.51	57.01	57.01	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$3.51	205.87	205.87	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	72.78	15	\$38.49	17%	50%	\$45.54	70.78	70.78	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	New	679.29	6	\$105.11	26%	45%	\$25.53	317.22	317.22	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,212.10	10	\$426.53	25%	45%	\$39.35	802.49	802.49	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	25.54	10	\$11.85	10%	50%	\$51.91	169.08	169.08	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	14.19	10	\$4.21	6%	25%	\$33.17	44.62	44.62	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	212.82	12	\$52.04	16%	25%	\$24.16	355.98	355.98	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	56.75	10	\$15.65	16%	36%	\$30.85	133.36	133.36	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	17,672.60	10	\$2,197.89	0%	0%	\$13.91	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	25,858.21	15	\$5,940.55	0%	0%	\$19.78	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	5,240.76	10	\$604.92	0%	0%	\$12.91	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	8,359.23	1	\$54.66	0%	0%	\$5.51	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	3,240.54	2	\$14.74	0%	0%	\$1.98	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	658.15	15	\$314.74	0%	0%	\$41.18	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.26	15	\$3.92	0%	0%	\$11.17	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	57.76	15	\$7.46	0%	0%	\$11.12	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	New	292.59	10	\$2,925.89	0%	0%	\$1,118.30	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	202.68	15	\$1.54	0%	0%	\$0.66	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	195.11	15	\$18.64	0%	0%	\$8.22	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	118.47	15	\$22.50	0%	0%	\$16.35	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	118.47	15	\$70.66	0%	0%	\$51.36	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	25.34	15	\$5.55	0%	0%	\$18.86	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	50.67	15	\$26.76	0%	0%	\$45.48	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	50.67	15	\$0.54	0%	0%	\$0.91	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	1,812.26	10	\$426.27	0%	0%	\$26.30	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,876.98	10	\$31.92	0%	0%	\$1.90	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	2,256.05	10	\$244.33	0%	0%	\$12.11	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	296.52	10	\$168.23	0%	0%	\$63.45	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	237.50	10	\$55.41	0%	0%	\$26.09	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	237.50	10	\$22.72	0%	0%	\$10.70	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	3,236.17	10	\$318.10	0%	0%	\$10.99	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	2.66	5	\$0.39	0%	0%	\$28.06	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	28.89	1	\$1.21	0%	0%	\$35.42	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	422.12	10	\$226.26	15%	15%	\$14.11	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	865.30	10	\$226.26	15%	15%	\$14.11	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	31.36	10	\$226.26	15%	15%	\$14.11	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	69.04	10	\$226.26	15%	15%	\$14.11	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	17.70	10	\$226.26	15%	15%	\$14.11	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	212.82	10	\$226.26	15%	15%	\$14.11	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	118.75	10	\$226.26	15%	15%	\$14.11	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	45.80	10	\$226.26	15%	15%	\$14.11	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	1,219.45	3	\$1,350.25	3%	11%	\$78.23	2.83	2.84	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	New	2,499.74	3	\$1,350.25	3%	11%	\$78.23	1.99	1.99	IND_SEM-HVAC-AEG-1
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	90.60	3	\$1,350.25	3%	11%	\$78.23	1.16	1.16	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	199.46	3	\$1,350.25	3%	11%	\$78.23	2.48	2.50	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	51.12	3	\$1,350.25	3%	11%	\$78.23	0.64	0.65	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	New	614.81	3	\$1,350.25	3%	11%	\$78.23	7.85	7.85	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	New	343.05	3	\$1,350.25	3%	11%	\$78.23	4.38	4.38	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	132.32	3	\$1,350.25	3%	11%	\$78.23	2.75	1.93	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	New	230.15	3	\$759.18	5%	39%	\$143.34	65.42	65.88	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	58.99	3	\$759.18	5%	39%	\$143.34	16.86	17.06	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	New	709.40	3	\$759.18	5%	39%	\$143.34	345.98	345.98	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	New	395.83	3	\$759.18	5%	39%	\$143.34	193.05	193.05	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	New	152.68	3	\$759.18	5%	39%	\$143.34	44.99	37.35	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	230.15	3	\$481.94	0%	0%	\$90.99	0.00	0.00	IND_RCX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	58.99	3	\$481.94	0%	0%	\$90.99	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	New	709.40	3	\$481.94	0%	0%	\$90.99	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	New	395.83	3	\$481.94	0%	0%	\$90.99	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	152.68	3	\$481.94	0%	0%	\$90.99	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	93.56	12	\$51.04	0%	0%	\$53.92	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$28.33	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,558.14	11	\$1,214.12	0%	0%	\$81.59	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	New	326.48	20	\$179.45	0%	26%	\$26.08	1,884.77	1,884.77	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	New	182.17	20	\$179.45	0%	26%	\$26.08	1,051.67	1,051.67	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Washington Industrial Measures Assumptions

Table I-14 Summary of Industrial Measure Assumptions in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.99	20	\$0.11	3%	100%	\$12.26	22.32	22.32	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.41	25	\$0.38	3%	100%	\$59.89	34.20	34.20	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	0.21	25	\$0.05	11%	100%	\$26.88	16.41	16.41	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$26.77	1.55	1.55	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.42	15	\$0.12	2%	100%	\$26.77	4.89	4.89	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$59.37	160.57	160.57	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.42)	28.43	32.90	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.19)	948.15	877.30	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	1.43	17	\$0.01	100%	100%	\$0.28	212.21	202.66	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.30)	3.56	3.37	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.18	100%	100%	(\$0.28)	217.75	206.52	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	9.86	17	\$0.05	100%	100%	\$0.16	51.34	49.57	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.03	20	\$0.11	3%	100%	\$11.88	25.23	25.23	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.87	25	\$1.04	3%	100%	\$57.24	46.22	46.22	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	New	0.23	25	\$0.05	11%	100%	\$23.59	24.99	24.99	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$24.11	1.95	1.95	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.46	15	\$0.12	2%	100%	\$24.11	5.96	5.96	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$59.56	194.02	194.02	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.42)	20.10	19.29	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.19)	939.90	883.99	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	New	1.43	17	\$0.01	100%	100%	\$0.28	185.02	177.44	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.30)	1.89	1.63	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.18	100%	100%	(\$0.28)	229.60	220.80	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	9.86	17	\$0.05	100%	100%	\$0.16	46.29	44.89	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.99	20	\$0.22	3%	100%	\$12.26	0.37	0.37	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.81	25	\$0.77	3%	100%	\$58.57	0.56	0.56	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.88	0.27	0.27	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$26.77	0.03	0.03	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.83	15	\$0.23	2%	100%	\$26.77	0.08	0.08	AEG BEST
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$59.37	2.66	2.66	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.33)	0.72	0.83	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.15)	23.90	22.11	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.02	100%	100%	\$0.22	5.35	5.11	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.23)	0.09	0.08	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.27	100%	100%	(\$0.22)	5.49	5.20	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.07	100%	100%	\$0.12	1.29	1.25	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.05	20	\$0.22	3%	100%	\$11.88	0.42	0.42	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.01	25	\$0.77	3%	100%	\$55.95	0.76	0.76	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	11%	100%	\$23.59	0.41	0.41	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.11	0.03	0.03	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.92	15	\$0.23	2%	100%	\$24.11	0.10	0.10	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$59.56	3.21	3.21	AEG-BEST
Mining	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.33)	0.51	0.49	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.15)	23.69	22.28	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.02	100%	100%	\$0.22	4.66	4.47	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.23)	0.05	0.04	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.27	100%	100%	(\$0.22)	5.79	5.56	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.07	100%	100%	\$0.12	1.17	1.13	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.99	20	\$0.11	3%	100%	\$12.26	10.22	10.22	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.41	25	\$0.38	3%	100%	\$58.57	15.51	15.51	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.21	25	\$0.05	11%	100%	\$26.88	7.52	7.52	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$26.77	0.71	0.71	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.42	15	\$0.12	2%	100%	\$26.77	2.24	2.24	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$59.37	73.55	73.55	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.09)	32.16	37.22	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.04)	1,072.64	992.49	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.43	17	\$0.00	100%	100%	\$0.06	240.08	229.27	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.06)	4.03	3.81	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.04	100%	100%	(\$0.06)	246.34	233.64	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	9.86	17	\$0.01	100%	100%	\$0.03	58.08	56.07	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.03	20	\$0.11	3%	100%	\$11.88	11.56	11.56	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.50	25	\$0.38	3%	100%	\$55.95	21.01	21.01	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	New	0.23	25	\$0.05	11%	100%	\$23.59	11.45	11.45	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$24.11	0.89	0.89	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.46	15	\$0.12	2%	100%	\$24.11	2.73	2.73	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$59.56	88.87	88.87	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.09)	22.74	21.82	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.04)	1,063.31	1,000.06	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	1.43	17	\$0.00	100%	100%	\$0.06	209.31	200.74	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.06)	2.14	1.84	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.04	100%	100%	(\$0.06)	259.74	249.79	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	9.86	17	\$0.01	100%	100%	\$0.03	52.37	50.79	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.22	20	\$0.02	3%	100%	\$12.26	15.55	15.55	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.31	25	\$0.09	3%	100%	\$58.57	23.58	23.58	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.05	25	\$0.01	11%	100%	\$26.88	11.43	11.43	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.03	15	\$0.03	2%	100%	\$26.77	1.08	1.08	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.09	15	\$0.03	2%	100%	\$26.77	3.41	3.41	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.69	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.69	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	25.22	20	\$14.78	100%	100%	\$59.37	111.84	111.84	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.39	8	\$0.00	100%	100%	(\$0.02)	65.63	75.95	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	9.04	15	\$0.00	100%	100%	(\$0.01)	2,188.70	2,025.15	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.32	17	\$0.00	100%	100%	\$0.01	489.87	467.83	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	1.13	8	\$0.00	100%	100%	(\$0.01)	8.22	7.78	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	24.24	15	\$0.00	100%	100%	(\$0.01)	502.64	476.73	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	2.19	17	\$0.00	100%	100%	\$0.01	118.51	114.42	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.23	20	\$0.02	3%	100%	\$11.88	17.57	17.57	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.33	25	\$0.09	3%	100%	\$55.95	31.94	31.94	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	0.05	25	\$0.01	11%	100%	\$23.59	17.41	17.41	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.03	15	\$0.03	2%	100%	\$24.11	1.36	1.36	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.10	15	\$0.03	2%	100%	\$24.11	4.15	4.15	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.69	0%	100%	\$0.00	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.69	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	25.14	20	\$14.78	100%	100%	\$59.56	135.13	135.13	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	New	0.39	8	\$0.00	100%	100%	(\$0.02)	46.41	44.52	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	New	9.04	15	\$0.00	100%	100%	(\$0.01)	2,169.66	2,040.60	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	0.32	17	\$0.00	100%	100%	\$0.01	427.10	409.61	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	New	1.13	8	\$0.00	100%	100%	(\$0.01)	4.37	3.75	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	24.24	15	\$0.00	100%	100%	(\$0.01)	530.00	509.70	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	2.19	17	\$0.00	100%	100%	\$0.01	106.87	103.63	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.80	20	\$0.09	3%	100%	\$12.26	0.08	0.08	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.12	25	\$0.31	3%	100%	\$58.57	0.11	0.11	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	0.16	25	\$0.04	11%	100%	\$26.88	0.06	0.06	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.11	15	\$0.09	2%	100%	\$26.77	0.01	0.01	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$0.09	2%	100%	\$26.77	0.02	0.02	AEG BEST
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	90.78	20	\$53.22	100%	100%	\$59.37	0.54	0.54	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	Existing	1.41	8	\$0.00	100%	100%	(\$1.51)	0.08	0.09	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	Existing	32.54	15	\$0.00	100%	100%	(\$0.70)	2.52	2.33	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	1.15	17	\$0.03	100%	100%	\$1.00	0.56	0.54	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	Existing	4.08	8	\$0.00	100%	100%	(\$1.08)	0.01	0.01	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	87.25	15	\$0.51	100%	100%	(\$1.02)	0.58	0.55	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	7.89	17	\$0.13	100%	100%	\$0.56	0.14	0.13	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.82	20	\$0.09	3%	100%	\$11.88	0.09	0.09	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.20	25	\$0.31	3%	100%	\$55.95	0.15	0.15	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	0.19	25	\$0.04	11%	100%	\$23.59	0.08	0.08	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.12	15	\$0.09	2%	100%	\$24.11	0.01	0.01	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.37	15	\$0.09	2%	100%	\$24.11	0.02	0.02	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.48	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	90.50	20	\$53.22	100%	100%	\$59.56	0.66	0.66	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	New	1.41	8	\$0.00	100%	100%	(\$1.51)	0.05	0.05	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	New	32.54	15	\$0.00	100%	100%	(\$0.70)	2.49	2.35	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	1.15	17	\$0.03	100%	100%	\$1.00	0.49	0.47	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	New	4.08	8	\$0.00	100%	100%	(\$1.08)	0.01	0.00	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	87.25	15	\$0.51	100%	100%	(\$1.02)	0.61	0.59	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	7.89	17	\$0.13	100%	100%	\$0.56	0.12	0.12	USDOE SSL Projections - 2016
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.99	20	\$0.22	3%	100%	\$12.26	0.15	0.15	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.81	25	\$0.77	3%	100%	\$58.57	0.23	0.23	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.88	0.11	0.11	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$26.77	0.01	0.01	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.83	15	\$0.23	2%	100%	\$26.77	0.03	0.03	AEG BEST
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$59.37	1.11	1.11	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.33)	0.19	0.22	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.15)	6.31	5.84	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.02	100%	100%	\$0.22	1.41	1.35	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.24)	0.02	0.02	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.28	100%	100%	(\$0.22)	1.45	1.38	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.07	100%	100%	\$0.12	0.34	0.33	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.05	20	\$0.22	3%	100%	\$11.88	0.17	0.17	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.01	25	\$0.77	3%	100%	\$55.95	0.32	0.32	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	11%	100%	\$23.59	0.17	0.17	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.11	0.01	0.01	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.92	15	\$0.23	2%	100%	\$24.11	0.04	0.04	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$59.56	1.34	1.34	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.33)	0.13	0.13	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.15)	6.26	5.89	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.02	100%	100%	\$0.22	1.23	1.18	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.24)	0.01	0.01	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.28	100%	100%	(\$0.22)	1.53	1.47	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.07	100%	100%	\$0.12	0.31	0.30	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.40	20	\$0.04	3%	100%	\$12.26	2.28	2.28	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.56	25	\$0.15	3%	100%	\$58.57	3.46	3.46	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.08	25	\$0.02	11%	100%	\$26.88	1.68	1.68	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.05	15	\$0.05	2%	100%	\$26.77	0.16	0.16	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.17	15	\$0.05	2%	100%	\$26.77	0.50	0.50	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.24	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.24	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	45.39	20	\$26.61	100%	100%	\$59.37	16.43	16.43	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.71	8	\$0.00	100%	100%	(\$0.18)	2.48	2.87	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	16.27	15	\$0.00	100%	100%	(\$0.08)	82.67	76.49	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.57	17	\$0.00	100%	100%	\$0.12	18.50	17.67	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	2.04	8	\$0.00	100%	100%	(\$0.13)	0.31	0.29	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	43.62	15	\$0.03	100%	100%	(\$0.12)	18.98	18.01	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	3.94	17	\$0.01	100%	100%	\$0.07	4.48	4.32	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.41	20	\$0.04	3%	100%	\$11.88	2.58	2.58	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.60	25	\$0.15	3%	100%	\$55.95	4.69	4.69	AEG BEST
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.09	25	\$0.02	11%	100%	\$23.59	2.56	2.56	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.06	15	\$0.05	2%	100%	\$24.11	0.20	0.20	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.18	15	\$0.05	2%	100%	\$24.11	0.61	0.61	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.24	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.24	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	45.25	20	\$26.61	100%	100%	\$59.56	19.85	19.85	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	0.71	8	\$0.00	100%	100%	(\$0.18)	1.75	1.68	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	16.27	15	\$0.00	100%	100%	(\$0.08)	81.95	77.07	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	0.57	17	\$0.00	100%	100%	\$0.12	16.13	15.47	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	2.04	8	\$0.00	100%	100%	(\$0.13)	0.16	0.14	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	43.62	15	\$0.03	100%	100%	(\$0.12)	20.02	19.25	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	3.94	17	\$0.01	100%	100%	\$0.07	4.04	3.91	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.48	20	\$0.27	3%	100%	\$12.26	1.70	1.70	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.51	25	\$0.96	3%	100%	\$58.57	2.58	2.58	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	0.51	25	\$0.13	11%	100%	\$26.88	1.25	1.25	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$0.29	2%	100%	\$26.77	0.12	0.12	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.04	15	\$0.29	2%	100%	\$26.77	0.37	0.37	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	283.67	20	\$166.32	100%	100%	\$59.37	12.24	12.24	AEG-BEST
Wastewater	Interior Lighting	General Service Lighting	lamps	Existing	4.41	8	\$0.00	100%	100%	(\$0.13)	2.36	2.74	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	Existing	101.69	15	\$0.00	100%	100%	(\$0.06)	78.84	72.94	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	3.58	17	\$0.01	100%	100%	\$0.08	17.64	16.85	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	Existing	12.75	8	\$0.00	100%	100%	(\$0.09)	0.30	0.28	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	272.65	15	\$0.13	100%	100%	(\$0.09)	18.10	17.17	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	24.65	17	\$0.03	100%	100%	\$0.05	4.27	4.12	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.56	20	\$0.27	3%	100%	\$11.88	1.92	1.92	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.76	25	\$0.96	3%	100%	\$55.95	3.50	3.50	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	New	0.59	25	\$0.13	11%	100%	\$23.59	1.91	1.91	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.38	15	\$0.29	2%	100%	\$24.11	0.15	0.15	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.15	15	\$0.29	2%	100%	\$24.11	0.45	0.45	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	282.80	20	\$166.32	100%	100%	\$59.56	14.79	14.79	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	General Service Lighting	lamps	New	4.41	8	\$0.00	100%	100%	(\$0.13)	1.67	1.60	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	New	101.69	15	\$0.00	100%	100%	(\$0.06)	78.15	73.50	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	New	3.58	17	\$0.01	100%	100%	\$0.08	15.38	14.75	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	New	12.75	8	\$0.00	100%	100%	(\$0.09)	0.16	0.14	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Area Lighting	lamps	New	272.65	15	\$0.13	100%	100%	(\$0.09)	19.09	18.36	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	24.65	17	\$0.03	100%	100%	\$0.05	3.85	3.73	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.48	20	\$0.27	3%	100%	\$12.26	1.82	1.82	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.51	25	\$0.96	3%	100%	\$58.57	2.77	2.77	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	Existing	0.51	25	\$0.13	11%	100%	\$26.88	1.34	1.34	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$0.29	2%	100%	\$26.77	0.13	0.13	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	1.04	15	\$0.29	2%	100%	\$26.77	0.40	0.40	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	283.67	20	\$166.32	100%	100%	\$59.37	13.12	13.12	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	Existing	4.41	8	\$0.00	100%	100%	(\$0.41)	2.53	2.93	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	Existing	101.69	15	\$0.00	100%	100%	(\$0.19)	84.52	78.20	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	Existing	3.58	17	\$0.03	100%	100%	\$0.28	18.92	18.07	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	Existing	12.75	8	\$0.00	100%	100%	(\$0.30)	0.32	0.30	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	Existing	272.65	15	\$0.44	100%	100%	(\$0.28)	19.41	18.41	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	Existing	24.65	17	\$0.11	100%	100%	\$0.15	4.58	4.42	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.56	20	\$0.27	3%	100%	\$11.88	2.06	2.06	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.76	25	\$0.96	3%	100%	\$55.95	3.75	3.75	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	New	0.59	25	\$0.13	11%	100%	\$23.59	2.04	2.04	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.38	15	\$0.29	2%	100%	\$24.11	0.16	0.16	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	New	1.15	15	\$0.29	2%	100%	\$24.11	0.49	0.49	AEG BEST
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$7.74	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	282.80	20	\$166.32	100%	100%	\$59.56	15.85	15.85	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	New	4.41	8	\$0.00	100%	100%	(\$0.41)	1.79	1.72	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	New	101.69	15	\$0.00	100%	100%	(\$0.19)	83.78	78.80	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	New	3.58	17	\$0.03	100%	100%	\$0.28	16.49	15.82	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	New	12.75	8	\$0.00	100%	100%	(\$0.30)	0.17	0.14	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	New	272.65	15	\$0.44	100%	100%	(\$0.28)	20.47	19.68	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	New	24.65	17	\$0.11	100%	100%	\$0.15	4.13	4.00	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.99	20	\$0.22	3%	100%	\$12.26	0.06	0.06	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.81	25	\$0.77	3%	100%	\$58.57	0.09	0.09	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.88	0.04	0.04	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$26.77	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.83	15	\$0.23	2%	100%	\$26.77	0.01	0.01	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$59.37	0.44	0.44	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$1.78)	0.06	0.07	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.01	100%	100%	(\$0.82)	1.92	1.78	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.10	100%	100%	\$1.18	0.43	0.41	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.01	100%	100%	(\$1.27)	0.01	0.01	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$1.49	100%	100%	(\$1.21)	0.44	0.42	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.39	100%	100%	\$0.66	0.10	0.10	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.05	20	\$0.22	3%	100%	\$11.88	0.07	0.07	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.01	25	\$0.77	3%	100%	\$55.95	0.12	0.12	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	11%	100%	\$23.59	0.07	0.07	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.11	0.01	0.01	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.92	15	\$0.23	2%	100%	\$24.11	0.02	0.02	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$59.56	0.53	0.53	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$1.78)	0.04	0.04	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.01	100%	100%	(\$0.82)	1.90	1.79	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.10	100%	100%	\$1.18	0.37	0.36	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.01	100%	100%	(\$1.27)	0.00	0.00	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$1.49	100%	100%	(\$1.21)	0.46	0.45	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.39	100%	100%	\$0.66	0.09	0.09	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.99	20	\$0.22	3%	100%	\$12.26	1.32	1.32	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.81	25	\$0.77	3%	100%	\$58.57	2.00	2.00	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.88	0.97	0.97	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$26.77	0.09	0.09	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.83	15	\$0.23	2%	100%	\$26.77	0.29	0.29	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$59.37	9.50	9.50	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$1.03)	0.81	0.94	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.01	100%	100%	(\$0.48)	27.07	25.05	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.06	100%	100%	\$0.68	6.06	5.79	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.74)	0.10	0.10	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.87	100%	100%	(\$0.70)	6.22	5.90	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.22	100%	100%	\$0.38	1.47	1.42	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.05	20	\$0.22	3%	100%	\$11.88	1.49	1.49	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.01	25	\$0.77	3%	100%	\$55.95	2.71	2.71	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	11%	100%	\$23.59	1.48	1.48	AEG BEST
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.11	0.12	0.12	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.92	15	\$0.23	2%	100%	\$24.11	0.35	0.35	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$59.56	11.48	11.48	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$1.03)	0.57	0.55	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.01	100%	100%	(\$0.48)	26.84	25.24	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.06	100%	100%	\$0.68	5.28	5.07	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.74)	0.05	0.05	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.87	100%	100%	(\$0.70)	6.56	6.30	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.22	100%	100%	\$0.38	1.32	1.28	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.99	20	\$0.11	3%	100%	\$12.26	10.73	10.73	AEG BEST
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.41	25	\$0.38	3%	100%	\$58.57	16.28	16.28	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	0.21	25	\$0.05	11%	100%	\$26.88	7.89	7.89	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$26.77	0.75	0.75	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.42	15	\$0.12	2%	100%	\$26.77	2.35	2.35	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$59.37	77.19	77.19	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.13)	9.84	11.39	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.06)	328.12	303.60	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	1.43	17	\$0.00	100%	100%	\$0.08	73.44	70.13	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.09)	1.23	1.17	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.05	100%	100%	(\$0.09)	75.35	71.47	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	9.86	17	\$0.01	100%	100%	\$0.05	17.77	17.15	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.03	20	\$0.11	3%	100%	\$11.88	12.13	12.13	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.50	25	\$0.38	3%	100%	\$55.95	22.04	22.04	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	0.23	25	\$0.05	11%	100%	\$23.59	12.02	12.02	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$24.11	0.94	0.94	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.46	15	\$0.12	2%	100%	\$24.11	2.86	2.86	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$59.56	93.27	93.27	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.13)	6.96	6.67	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.06)	325.27	305.92	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	1.43	17	\$0.00	100%	100%	\$0.08	64.03	61.41	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.09)	0.65	0.56	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.05	100%	100%	(\$0.09)	79.46	76.41	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	9.86	17	\$0.01	100%	100%	\$0.05	16.02	15.54	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.99	20	\$0.22	3%	100%	\$12.26	1.13	1.13	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.81	25	\$0.77	3%	100%	\$58.57	1.71	1.71	AEG BEST
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.88	0.83	0.83	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$26.77	0.08	0.08	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.83	15	\$0.23	2%	100%	\$26.77	0.25	0.25	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$59.37	8.12	8.12	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.13)	2.47	2.85	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.06)	82.24	76.10	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.01	100%	100%	\$0.09	18.41	17.58	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.09)	0.31	0.29	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.11	100%	100%	(\$0.09)	18.89	17.91	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.03	100%	100%	\$0.05	4.45	4.30	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.05	20	\$0.22	3%	100%	\$11.88	1.28	1.28	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.01	25	\$0.77	3%	100%	\$55.95	2.32	2.32	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	11%	100%	\$23.59	1.26	1.26	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.11	0.10	0.10	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.92	15	\$0.23	2%	100%	\$24.11	0.30	0.30	AEG BEST
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$59.56	9.82	9.82	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.13)	1.74	1.67	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.06)	81.53	76.68	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.01	100%	100%	\$0.09	16.05	15.39	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.09)	0.16	0.14	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.11	100%	100%	(\$0.09)	19.91	19.15	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.03	100%	100%	\$0.05	4.02	3.89	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.99	20	\$0.11	3%	100%	\$12.26	2.84	2.84	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.41	25	\$0.38	3%	100%	\$58.57	4.31	4.31	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.21	25	\$0.05	11%	100%	\$26.88	2.09	2.09	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$26.77	0.20	0.20	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.42	15	\$0.12	2%	100%	\$26.77	0.62	0.62	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$59.37	20.46	20.46	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.19)	3.86	4.46	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.09)	128.61	119.00	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.43	17	\$0.01	100%	100%	\$0.13	28.79	27.49	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.13)	0.48	0.46	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.08	100%	100%	(\$0.13)	29.54	28.01	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	9.86	17	\$0.02	100%	100%	\$0.07	6.96	6.72	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.03	20	\$0.11	3%	100%	\$11.88	3.21	3.21	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.50	25	\$0.38	3%	100%	\$55.95	5.84	5.84	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	0.23	25	\$0.05	11%	100%	\$23.59	3.18	3.18	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$24.11	0.25	0.25	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.46	15	\$0.12	2%	100%	\$24.11	0.76	0.76	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$3.10	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$59.56	24.72	24.72	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.19)	2.73	2.62	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.09)	127.49	119.91	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	1.43	17	\$0.01	100%	100%	\$0.13	25.10	24.07	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.13)	0.26	0.22	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.08	100%	100%	(\$0.13)	31.14	29.95	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	9.86	17	\$0.02	100%	100%	\$0.07	6.28	6.09	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.99	20	\$0.22	3%	100%	\$12.26	72.84	72.84	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.81	25	\$0.77	3%	100%	\$58.57	110.50	110.50	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.88	53.56	53.56	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$26.77	5.06	5.06	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.83	15	\$0.23	2%	100%	\$26.77	15.98	15.98	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$59.37	524.06	524.06	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.02)	71.89	83.20	USDOE SSL Projections - 2016

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Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.01)	2,397.63	2,218.48	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.00	100%	100%	\$0.01	536.64	512.49	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.01)	9.00	8.52	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.01	100%	100%	(\$0.01)	550.62	522.24	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.00	100%	100%	\$0.01	129.83	125.34	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.05	20	\$0.22	3%	100%	\$11.88	82.34	82.34	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.01	25	\$0.77	3%	100%	\$55.95	149.66	149.66	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	0.47	25	\$0.10	11%	100%	\$23.59	81.57	81.57	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$24.11	6.37	6.37	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.92	15	\$0.23	2%	100%	\$24.11	19.44	19.44	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST

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Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$6.19	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	2%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	12%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$59.56	633.24	633.24	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.02)	50.84	48.77	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.01)	2,376.78	2,235.39	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.00	100%	100%	\$0.01	467.87	448.71	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.01)	4.78	4.11	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.01	100%	100%	(\$0.01)	580.60	558.35	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.00	100%	100%	\$0.01	117.07	113.52	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.82	7.33	7.49	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.82	29.47	29.51	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.82	6.05	6.13	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,299.28	2.86	2.92	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,299.28	1.25	1.25	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,299.28	0.26	0.26	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.06	0.06	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	19.64	19.68	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	4.03	4.09	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.95	0.92	0.94	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.95	2.77	2.77	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.95	0.57	0.58	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	2.40	2.45	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.57	19.97	20.42	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	9.69	9.91	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	1.76	1.82	CHLR_VSPMP-Cooling-SCE-17_R0-86

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	7.90	8.16	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.03	5	\$0.40	18%	30%	\$3,144.69	8.83	9.10	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	1.93	1.98	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.16	15	\$0.65	15%	50%	\$53.55	34.86	35.92	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.55	271.34	272.02	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	3.97	4.11	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$121.22	15.60	15.92	STAT_WIFI-All-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$121.22	62.68	62.78	STAT_WIFI-All-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$121.22	12.87	13.05	STAT_WIFI-All-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.06	15	\$0.36	3%	17%	\$795.04	80.06	85.21	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.09	15	\$0.60	3%	17%	\$937.01	115.11	122.47	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.85	0.96	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	32.00	32.81	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	32.76	33.60	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.41	39.76	41.87	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.69	57.98	61.07	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.33	39.64	41.74	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,114.87	20	\$383.30	15%	20%	\$38.23	63.26	63.26	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	41.07	15	\$41.15	20%	50%	\$125.71	205.18	205.18	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	65.71	15	\$28.80	20%	50%	\$54.99	328.29	328.29	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	24.38	10	\$3.58	9%	38%	\$54.93	116.70	116.70	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	18.29	12	\$5.45	9%	38%	(\$23.24)	85.24	85.24	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	18.29	10	\$5.68	9%	38%	\$47.44	85.24	85.24	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	83.53	10	\$8.40	9%	38%	\$47.89	399.80	399.80	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	98.72	10	\$13.90	9%	38%	\$18.25	460.17	460.17	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	151.88	10	\$70.05	9%	38%	\$70.46	707.96	707.96	FAN_VSD-Motors-UN-v1.0-5
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	56.43	10	\$4.24	17%	50%	\$38.58	315.11	315.11	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	23.10	23.10	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1

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Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	1.56	1.56	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	64.50	10	\$6.98	9%	15%	\$16.53	63.29	63.29	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	12.90	10	\$3.03	9%	38%	\$4.42	60.13	60.13	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	32.25	10	\$3.05	18%	75%	\$41.54	308.68	308.68	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	24.19	15	\$18.61	26%	45%	\$96.52	75.16	75.16	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.81	10	\$0.29	17%	50%	\$54.13	4.50	4.50	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	4.84	10	\$0.93	17%	50%	\$29.38	27.01	27.01	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	76.45	76.45	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	4.84	15	\$2.56	17%	50%	\$66.36	27.01	27.01	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	Existing	45.15	6	\$6.99	26%	45%	\$32.76	140.30	140.30	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	174.78	10	\$61.50	25%	45%	\$53.75	571.72	571.72	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	4.45	10	\$1.88	10%	50%	\$64.50	120.00	120.00	MTR_GRWND<100HP-Motors-7PLN-v5-17
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	2.47	10	\$0.67	6%	25%	\$41.21	31.67	31.67	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	37.05	12	\$8.24	16%	25%	\$31.23	237.50	237.50	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	9.88	10	\$2.48	16%	36%	\$38.33	136.56	136.56	DRV_SYNBELT-Motors-7PLN-v5-1

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Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,830.26	10	\$227.62	8%	17%	\$19.00	186.93	186.93	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	Existing	2,678.00	15	\$615.23	8%	17%	\$28.83	273.51	273.51	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	268.67	10	\$604.92	15%	17%	\$343.92	4.39	4.39	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	865.72	1	\$54.66	15%	17%	\$60.27	19.65	19.65	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	335.61	2	\$14.74	15%	17%	\$22.31	7.62	7.62	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	273.80	15	\$130.94	15%	15%	\$60.00	17.91	17.91	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	5.17	15	\$0.67	15%	30%	\$16.27	33.10	33.10	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	4.89	15	\$0.63	8%	16%	\$16.21	12.02	12.02	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	Existing	7.50	10	\$75.00	15%	15%	\$1,527.54	3.44	3.44	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	4.19	15	\$0.03	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	81.17	15	\$7.75	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	49.28	15	\$9.36	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	49.28	15	\$29.40	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.52	15	\$0.11	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	1.05	15	\$0.55	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	1.05	15	\$0.01	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	261.32	10	\$61.47	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	270.66	10	\$4.60	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	146.44	10	\$15.86	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	55.13	10	\$28.45	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	44.15	10	\$9.37	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	44.15	10	\$3.84	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	466.65	10	\$45.87	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	0.49	5	\$0.07	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	4.17	1	\$0.18	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	5.16	10	\$10.33	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	22.87	10	\$10.33	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	0.79	10	\$10.33	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	3.63	10	\$10.33	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.85	10	\$10.33	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	29.64	10	\$10.33	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	Existing	22.08	10	\$10.33	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	3.64	10	\$10.33	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	Existing	14.89	3	\$63.34	3%	11%	\$88.34	0.83	0.85	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	Existing	66.06	3	\$63.34	3%	11%	\$88.34	3.45	3.45	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	2.28	3	\$63.34	3%	11%	\$88.34	0.71	0.72	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	10.49	3	\$63.34	3%	11%	\$88.34	2.86	3.05	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	2.45	3	\$63.34	3%	11%	\$88.34	0.72	0.75	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	Existing	85.62	3	\$63.34	3%	11%	\$88.34	27.37	27.37	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	Existing	63.78	3	\$63.34	3%	11%	\$88.34	20.38	20.38	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	10.53	3	\$63.34	3%	11%	\$88.34	5.80	4.51	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	Existing	12.10	3	\$89.37	0%	0%	\$158.94	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Exterior Lighting	Commissioning	employee	Existing	2.82	3	\$89.37	0%	0%	\$158.94	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	Existing	98.79	3	\$89.37	0%	0%	\$158.94	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	Existing	73.59	3	\$89.37	0%	0%	\$158.94	0.00	0.00	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	Existing	12.15	3	\$89.37	0%	0%	\$158.94	0.00	0.00	IND_SEM-Lighting-AEG-1

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Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	12.10	3	\$56.74	5%	39%	\$100.90	56.06	59.83	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	2.82	3	\$56.74	5%	39%	\$100.90	14.20	14.68	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	Existing	98.79	3	\$56.74	5%	39%	\$100.90	536.80	536.80	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	Existing	73.59	3	\$56.74	5%	39%	\$100.90	399.86	399.86	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	12.15	3	\$56.74	5%	39%	\$100.90	113.83	88.46	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	3.29	12	\$1.80	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	54.86	11	\$42.75	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	2.59	2.59	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	9.29	9.29	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	1.94	1.94	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.73	1.01	1.01	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.73	0.39	0.39	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.73	0.08	0.08	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.02	0.02	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	6.19	6.19	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	1.29	1.29	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.32	0.32	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.85	0.85	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.18	0.18	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.33	0.33	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	3.42	3.42	AEG-BEST

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Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	1.66	1.66	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.53	0.53	CHLR_VSPMP-Cooling-SCE-17_R0-86
Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	1.92	1.92	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.03	5	\$0.40	18%	30%	\$2,906.06	0.75	0.75	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.57	0.57	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	6.53	6.53	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	45.29	45.29	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.31	0.31	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	1.82	1.82	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	6.51	6.51	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	1.36	1.36	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.05	15	\$0.36	22%	41%	\$867.81	67.39	67.62	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.07	15	\$0.60	22%	41%	\$1,022.78	94.35	94.67	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.11	0.11	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	7.79	7.87	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	9.61	9.70	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	4.86	4.95	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	3.85	3.91	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.90	4.04	4.12	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,114.87	20	\$383.30	15%	20%	\$38.23	22.73	22.73	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	41.07	15	\$41.15	20%	50%	\$125.71	58.82	58.82	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	New	65.71	15	\$28.80	20%	50%	\$54.99	94.12	94.12	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	24.38	10	\$3.58	9%	38%	\$54.93	26.83	26.83	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	New	18.29	12	\$5.45	9%	38%	(\$23.24)	29.13	29.13	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	18.29	10	\$5.68	9%	38%	\$47.44	27.26	27.26	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	83.53	10	\$8.40	9%	38%	\$47.89	91.92	91.92	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	New	98.72	10	\$13.90	9%	38%	\$18.25	147.18	147.18	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	151.88	10	\$70.05	9%	38%	\$70.46	226.43	226.43	FAN_VSD-Motors-UN-v1.0-5

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Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	56.43	10	\$4.24	17%	50%	\$38.58	72.45	72.45	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	8.30	8.30	CMPAIR_HTCPMEDSRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.36	0.36	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	64.50	10	\$6.98	9%	15%	\$16.53	20.24	20.24	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	New	12.90	10	\$3.03	9%	38%	\$4.42	19.23	19.23	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	32.25	10	\$3.05	18%	75%	\$41.54	70.97	70.97	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	24.19	15	\$18.61	26%	45%	\$96.52	27.00	27.00	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.81	10	\$0.29	17%	50%	\$54.13	1.03	1.03	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	4.84	10	\$0.93	17%	50%	\$29.38	6.21	6.21	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	22.48	22.48	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	4.84	15	\$2.56	17%	50%	\$66.36	7.74	7.74	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	New	45.15	6	\$6.99	26%	45%	\$32.76	33.16	33.16	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	174.78	10	\$61.50	25%	45%	\$53.75	182.85	182.85	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	4.45	10	\$1.88	10%	50%	\$64.50	23.08	23.08	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	2.47	10	\$0.67	6%	25%	\$41.21	6.09	6.09	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	37.05	12	\$8.24	16%	25%	\$31.23	48.54	48.54	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	9.88	10	\$2.48	16%	36%	\$38.33	18.07	18.07	DRV_SYNBELT-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	New	1,830.26	10	\$227.62	8%	17%	\$19.00	59.77	59.77	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	New	2,678.00	15	\$615.23	8%	17%	\$28.83	97.59	97.59	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	268.67	10	\$604.92	15%	17%	\$343.92	1.41	1.41	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	865.72	1	\$54.66	15%	17%	\$60.27	7.06	7.06	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	335.61	2	\$14.74	15%	17%	\$22.31	0.52	0.52	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	New	273.80	15	\$130.94	15%	15%	\$60.00	6.43	6.43	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.17	15	\$0.67	15%	30%	\$16.27	11.81	11.81	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	4.89	15	\$0.63	8%	16%	\$16.21	4.32	4.32	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	New	7.50	10	\$75.00	15%	15%	\$1,527.54	1.10	1.10	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	4.19	15	\$0.03	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	81.17	15	\$7.75	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	49.28	15	\$9.36	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	49.28	15	\$29.40	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.52	15	\$0.11	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	1.05	15	\$0.55	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	1.05	15	\$0.01	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	New	261.32	10	\$61.47	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	270.66	10	\$4.60	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	New	146.44	10	\$15.86	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	New	55.13	10	\$28.45	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	44.15	10	\$9.37	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	44.15	10	\$3.84	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	466.65	10	\$45.87	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	New	0.49	5	\$0.07	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	4.17	1	\$0.18	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	New	5.61	10	\$10.33	15%	15%	\$17.62	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Heating	Transformer - High Efficiency	employee	New	22.97	10	\$10.33	15%	15%	\$17.62	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	0.78	10	\$10.33	15%	15%	\$17.62	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	3.08	10	\$10.33	15%	15%	\$17.62	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	0.79	10	\$10.33	15%	15%	\$17.62	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	New	29.64	10	\$10.33	15%	15%	\$17.62	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	New	22.08	10	\$10.33	15%	15%	\$17.62	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	3.58	10	\$10.33	15%	15%	\$17.62	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	New	16.21	3	\$63.34	3%	11%	\$88.18	0.04	0.04	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	New	66.34	3	\$63.34	3%	11%	\$88.18	0.14	0.14	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	New	2.26	3	\$63.34	3%	11%	\$88.18	0.03	0.03	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	8.90	3	\$63.34	3%	11%	\$88.18	0.11	0.11	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	2.29	3	\$63.34	3%	11%	\$88.18	0.03	0.03	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	New	85.62	3	\$63.34	3%	11%	\$88.18	1.08	1.08	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	New	63.78	3	\$63.34	3%	11%	\$88.18	0.80	0.80	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	10.35	3	\$63.34	3%	11%	\$88.18	0.21	0.15	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	New	10.27	3	\$89.37	5%	39%	\$160.41	4.17	4.19	IND_SEM-HVAC-AEG-1

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Agriculture	Exterior Lighting	Commissioning	employee	New	2.64	3	\$89.37	5%	39%	\$160.41	1.07	1.09	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	New	98.79	3	\$89.37	5%	39%	\$160.41	54.87	54.87	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	New	73.59	3	\$89.37	5%	39%	\$160.41	51.09	51.09	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	New	11.94	3	\$89.37	5%	39%	\$160.41	5.01	4.16	IND_SEM-Lighting-AEG-1
Agriculture	Interior Lighting	Retrocommissioning	employee	New	10.27	3	\$56.74	0%	0%	\$101.83	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	2.64	3	\$56.74	0%	0%	\$101.83	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	New	98.79	3	\$56.74	0%	0%	\$101.83	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	New	73.59	3	\$56.74	0%	0%	\$101.83	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	New	11.94	3	\$56.74	0%	0%	\$101.83	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	New	3.29	12	\$1.80	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	54.86	11	\$42.75	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.12	0.13	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	0.49	0.49	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.10	0.10	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.78	0.05	0.05	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.78	0.02	0.02	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.78	0.00	0.00	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.00	0.00	Building Energy Simulation Tool
Mining	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	0.32	0.32	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.07	0.07	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.02	0.02	Building Energy Simulation Tool

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Mining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.05	0.05	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.01	0.01	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.04	0.04	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.56	0.33	0.34	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	0.16	0.16	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.03	0.03	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.13	0.13	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	Existing	0.03	5	\$0.40	18%	30%	\$3,884.73	0.15	0.15	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.03	0.03	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	0.59	0.61	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	4.48	4.49	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.07	0.07	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	0.26	0.27	STAT_WIFI-AII-7PLN-v2-1
Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	1.03	1.04	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	0.21	0.22	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.05	15	\$0.36	7%	33%	\$981.97	4.14	4.40	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.07	15	\$0.60	7%	33%	\$1,157.33	5.79	6.16	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	0.81	0.83	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	0.83	0.85	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.40	1.00	1.05	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	1.46	1.54	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,401.93	1.00	1.05	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	228.98	20	\$78.72	15%	20%	\$38.23	0.51	0.51	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$6.64	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Mining	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$4.65	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	Existing	604.53	10	\$88.64	9%	38%	\$54.93	56.92	56.92	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	Existing	453.40	12	\$135.08	9%	38%	(\$23.24)	41.58	41.58	PUMP_SYSOPT-Motors-UN-v1.0-5

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Mining	Motors	Pumping System - Variable Speed Drive	employee	Existing	453.40	10	\$140.80	9%	38%	\$47.44	41.58	41.58	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	Existing	92.36	10	\$9.29	9%	38%	\$47.89	8.70	8.70	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	Existing	109.15	10	\$15.36	9%	38%	\$18.25	10.01	10.01	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	Existing	167.93	10	\$77.45	9%	38%	\$70.46	15.40	15.40	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	440.80	10	\$33.09	17%	50%	\$38.58	48.42	48.42	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	3.55	3.55	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.24	0.24	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	503.78	10	\$54.50	9%	15%	\$16.53	9.73	9.73	E3T
Mining	Motors	Compressed Air - System Controls	employee	Existing	100.76	10	\$23.66	9%	38%	\$4.42	9.24	9.24	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	Existing	251.89	10	\$23.78	18%	75%	\$41.54	47.43	47.43	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	188.92	15	\$145.33	26%	45%	\$96.52	11.55	11.55	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	6.30	10	\$2.23	17%	50%	\$54.13	0.69	0.69	CMPAIR_LPDPFLT-Motors-ILTRM-v4.0-1
Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	37.78	10	\$7.27	17%	50%	\$29.38	4.15	4.15	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	11.75	11.75	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	37.78	15	\$19.98	17%	50%	\$66.36	4.15	4.15	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Mining	Motors	Compressed Air - End Use Optimization	employee	Existing	352.64	6	\$54.57	26%	45%	\$32.76	21.56	21.56	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	Existing	165.10	10	\$58.10	25%	45%	\$53.75	10.62	10.62	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	15.11	10	\$6.38	10%	50%	\$64.50	10.01	10.01	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	8.40	10	\$2.27	6%	25%	\$41.21	2.64	2.64	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	125.94	12	\$28.01	16%	25%	\$31.23	19.81	19.81	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	Existing	33.59	10	\$8.43	16%	36%	\$38.33	11.39	11.39	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	375.91	10	\$46.75	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	550.03	15	\$126.36	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	3,330.70	10	\$604.92	0%	0%	\$27.74	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	177.81	1	\$54.66	0%	0%	\$293.47	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	68.93	2	\$14.74	0%	0%	\$108.63	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Mining	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$21.13	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	750.96	15	\$97.00	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Mining	Motors	Automatic Milker Takeoffs	Cows	Existing	185.95	10	\$1,859.52	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	Existing	35.35	15	\$0.27	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$1.25	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$1.51	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$4.74	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	4.42	15	\$0.97	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	8.84	15	\$4.67	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	8.84	15	\$0.09	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	Existing	246.85	10	\$58.06	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	255.67	10	\$4.35	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	Existing	39.77	10	\$4.31	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Mining	Process	Paper: Premium Control Large Material	employee	Existing	41.38	10	\$21.36	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	Existing	33.14	10	\$7.03	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	Existing	33.14	10	\$2.88	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Mining	Motors	Kraft: Efficient Agitator	employee	Existing	440.80	10	\$43.33	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	Existing	0.37	5	\$0.05	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	3.93	1	\$0.17	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	Existing	4.45	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	Existing	19.24	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	Existing	0.66	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	Existing	4.65	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.08	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	Existing	125.94	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	Existing	9.94	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.50	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	Existing	12.86	3	\$119.77	3%	11%	\$89.25	0.01	0.01	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	Existing	55.57	3	\$119.77	3%	11%	\$89.25	0.06	0.06	IND_SEM-HVAC-AEG-1
Mining	Ventilation	Strategic Energy Management	employee	Existing	1.92	3	\$119.77	3%	11%	\$89.25	0.01	0.01	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	Existing	13.44	3	\$119.77	3%	11%	\$89.25	0.07	0.08	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	Existing	3.13	3	\$119.77	3%	11%	\$89.25	0.02	0.02	IND_SEM-Lighting-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Motors	Strategic Energy Management	employee	Existing	363.84	3	\$119.77	3%	11%	\$89.25	2.28	2.28	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	Existing	28.72	3	\$119.77	3%	11%	\$89.25	0.18	0.18	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	Existing	4.32	3	\$119.77	3%	11%	\$89.25	0.05	0.04	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	Existing	15.51	3	\$224.89	0%	0%	\$169.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	Existing	3.62	3	\$224.89	0%	0%	\$169.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	Existing	419.81	3	\$224.89	0%	0%	\$169.78	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	Existing	33.14	3	\$224.89	0%	0%	\$169.78	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	Existing	4.99	3	\$224.89	0%	0%	\$169.78	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	Existing	15.51	3	\$142.77	10%	40%	\$107.78	1.24	1.33	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	Existing	3.62	3	\$142.77	10%	40%	\$107.78	0.31	0.33	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	Existing	419.81	3	\$142.77	10%	40%	\$107.78	39.50	39.50	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	Existing	33.14	3	\$142.77	10%	40%	\$107.78	3.12	3.12	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	Existing	4.99	3	\$142.77	10%	40%	\$107.78	0.81	0.63	IND_RCX-Process-AEG-1
Mining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	81.67	12	\$44.56	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,360.19	11	\$1,059.88	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Mining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	0.04	0.04	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	0.15	0.15	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.03	0.03	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.43	0.02	0.02	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.43	0.01	0.01	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.43	0.00	0.00	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool

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Mining	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.10	0.10	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.02	0.02	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.01	0.01	Building Energy Simulation Tool
Mining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.01	0.01	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.01	0.01	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.06	0.06	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.03	0.03	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.03	0.03	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	New	0.03	5	\$0.40	18%	30%	\$3,588.55	0.01	0.01	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.11	0.11	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	0.76	0.76	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.03	0.03	STAT_WIFI-All-7PLN-v2-1

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Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	0.11	0.11	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.02	0.02	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.04	15	\$0.36	22%	41%	\$1,071.85	1.70	1.71	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.06	15	\$0.60	22%	41%	\$1,263.25	2.38	2.39	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.20	0.20	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.24	0.24	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.12	0.13	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	0.10	0.10	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.95	0.10	0.11	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	228.98	20	\$78.72	15%	20%	\$38.23	0.18	0.18	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$6.64	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Mining	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$4.65	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	New	604.53	10	\$88.64	9%	38%	\$54.93	13.09	13.09	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	New	453.40	12	\$135.08	9%	38%	(\$23.24)	14.21	14.21	PUMP_SYSOPT-Motors-UN-v1.0-5
Mining	Motors	Pumping System - Variable Speed Drive	employee	New	453.40	10	\$140.80	9%	38%	\$47.44	13.30	13.30	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	New	92.36	10	\$9.29	9%	38%	\$47.89	2.00	2.00	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	New	109.15	10	\$15.36	9%	38%	\$18.25	3.20	3.20	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	New	167.93	10	\$77.45	9%	38%	\$70.46	4.93	4.93	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	New	440.80	10	\$33.09	17%	50%	\$38.58	11.13	11.13	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	1.28	1.28	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.06	0.06	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	503.78	10	\$54.50	9%	15%	\$16.53	3.11	3.11	E3T
Mining	Motors	Compressed Air - System Controls	employee	New	100.76	10	\$23.66	9%	38%	\$4.42	2.96	2.96	CMPAIR_SYSCRTL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	New	251.89	10	\$23.78	18%	75%	\$41.54	10.91	10.91	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	New	188.92	15	\$145.33	26%	45%	\$96.52	4.15	4.15	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	6.30	10	\$2.23	17%	50%	\$54.13	0.16	0.16	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	37.78	10	\$7.27	17%	50%	\$29.38	0.95	0.95	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	3.45	3.45	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	37.78	15	\$19.98	17%	50%	\$66.36	1.19	1.19	CMPAIR_STORAGE-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - End Use Optimization	employee	New	352.64	6	\$54.57	26%	45%	\$32.76	5.10	5.10	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	New	165.10	10	\$58.10	25%	45%	\$53.75	3.40	3.40	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	New	15.11	10	\$6.38	10%	50%	\$64.50	1.95	1.95	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	New	8.40	10	\$2.27	6%	25%	\$41.21	0.51	0.51	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	New	125.94	12	\$28.01	16%	25%	\$31.23	4.10	4.10	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	New	33.59	10	\$8.43	16%	36%	\$38.33	1.53	1.53	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	New	375.91	10	\$46.75	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	New	550.03	15	\$126.36	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	3,330.70	10	\$604.92	0%	0%	\$27.74	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	177.81	1	\$54.66	0%	0%	\$293.47	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	68.93	2	\$14.74	0%	0%	\$108.63	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Mining	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$21.13	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	750.96	15	\$97.00	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Mining	Motors	Automatic Milker Takeoffs	Cows	New	185.95	10	\$1,859.52	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	New	35.35	15	\$0.27	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$1.25	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$1.51	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$4.74	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	4.42	15	\$0.97	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	8.84	15	\$4.67	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	8.84	15	\$0.09	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	New	246.85	10	\$58.06	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	255.67	10	\$4.35	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	New	39.77	10	\$4.31	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Mining	Process	Paper: Premium Control Large Material	employee	New	41.38	10	\$21.36	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	New	33.14	10	\$7.03	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	New	33.14	10	\$2.88	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Mining	Motors	Kraft: Efficient Agitator	employee	New	440.80	10	\$43.33	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	New	0.37	5	\$0.05	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.93	1	\$0.17	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	New	4.73	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	New	19.32	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	New	0.66	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	New	3.95	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	New	1.01	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	New	125.94	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	New	9.94	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	New	1.47	10	\$19.54	15%	15%	\$17.83	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	New	13.65	3	\$119.77	3%	11%	\$89.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	New	55.81	3	\$119.77	3%	11%	\$89.23	0.00	0.00	IND_SEM-HVAC-AEG-1

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Mining	Ventilation	Strategic Energy Management	employee	New	1.90	3	\$119.77	3%	11%	\$89.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	New	11.40	3	\$119.77	3%	11%	\$89.23	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	New	2.93	3	\$119.77	3%	11%	\$89.23	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Motors	Strategic Energy Management	employee	New	363.84	3	\$119.77	3%	11%	\$89.23	0.09	0.09	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	New	28.72	3	\$119.77	3%	11%	\$89.23	0.01	0.01	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	New	4.25	3	\$119.77	3%	11%	\$89.23	0.00	0.00	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	New	13.16	3	\$224.89	10%	40%	\$170.35	0.09	0.09	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	New	3.38	3	\$224.89	10%	40%	\$170.35	0.02	0.02	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	New	419.81	3	\$224.89	10%	40%	\$170.35	5.05	5.05	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	New	33.14	3	\$224.89	10%	40%	\$170.35	0.24	0.24	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	New	4.90	3	\$224.89	10%	40%	\$170.35	0.04	0.03	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	New	13.16	3	\$142.77	0%	0%	\$108.14	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	New	3.38	3	\$142.77	0%	0%	\$108.14	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	New	419.81	3	\$142.77	0%	0%	\$108.14	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	New	33.14	3	\$142.77	0%	0%	\$108.14	0.00	0.00	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	New	4.90	3	\$142.77	0%	0%	\$108.14	0.00	0.00	IND_RCX-Process-AEG-1

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Mining	Motors	Municipal Sewage Treatment - Optimization	employee	New	81.67	12	\$44.56	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,360.19	11	\$1,059.88	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Mining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	3.44	3.50	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	13.50	13.52	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	2.77	2.81	Building Energy Simulation Tool

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Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.79	1.34	1.37	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.79	0.57	0.57	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.79	0.12	0.12	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.03	0.03	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	9.00	9.01	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	1.85	1.87	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.43	0.44	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	1.27	1.27	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.26	0.26	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	1.10	1.12	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.57	9.14	9.35	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	4.44	4.54	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.81	0.83	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	3.62	3.74	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.05	5	\$0.40	18%	30%	\$1,901.43	4.05	4.17	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.89	0.91	VENT_DCV-Ventilation-7PLN-v5-5

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Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	16.35	16.82	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	124.28	124.59	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	1.82	1.88	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	7.31	7.45	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	28.71	28.75	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	5.89	5.98	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.36	7%	33%	\$480.71	186.02	197.91	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.60	7%	33%	\$566.56	260.43	277.08	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.97	1.08	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	36.20	37.12	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	37.07	38.01	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.41	44.97	47.37	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	65.58	69.07	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.30	44.83	47.22	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,824.05	20	\$970.92	15%	20%	\$38.23	39.21	39.21	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	127.75	15	\$127.99	20%	50%	\$125.71	156.19	156.19	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	204.40	15	\$89.58	20%	50%	\$54.99	249.90	249.90	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	597.71	10	\$87.64	9%	38%	\$54.93	700.07	700.07	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	448.28	12	\$133.56	9%	38%	(\$23.24)	511.36	511.36	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	448.28	10	\$139.21	9%	38%	\$47.44	511.36	511.36	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	546.58	10	\$54.95	9%	38%	\$47.89	640.17	640.17	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	645.96	10	\$90.92	9%	38%	\$18.25	736.84	736.84	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	993.78	10	\$458.36	9%	38%	\$70.46	1,133.61	1,133.61	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	668.87	10	\$50.21	17%	50%	\$38.58	913.97	913.97	CMPAIR_EQPT-Motors-7PLN-v5-2
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	67.01	67.01	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	4.54	4.54	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1

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Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	764.42	10	\$82.70	9%	15%	\$16.53	183.57	183.57	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	152.88	10	\$35.90	9%	38%	\$4.42	174.39	174.39	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	382.21	10	\$36.09	18%	75%	\$41.54	895.32	895.32	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	286.66	15	\$220.52	26%	45%	\$96.52	217.99	217.99	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	9.56	10	\$3.39	17%	50%	\$54.13	13.06	13.06	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	57.33	10	\$11.03	17%	50%	\$29.38	78.34	78.34	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	221.74	221.74	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	57.33	15	\$30.32	17%	50%	\$66.36	78.34	78.34	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	535.09	6	\$82.80	26%	45%	\$32.76	406.92	406.92	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,755.47	10	\$617.74	25%	45%	\$53.75	1,405.25	1,405.25	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	36.36	10	\$15.35	10%	50%	\$64.50	300.20	300.20	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	20.20	10	\$5.45	6%	25%	\$41.21	79.22	79.22	MTR_GRWND>100HP-Motors-7PLN-v5-25
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	303.02	12	\$67.40	16%	25%	\$31.23	594.14	594.14	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	80.81	10	\$20.28	16%	36%	\$38.33	341.62	341.62	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	4,636.18	10	\$576.59	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	6,783.57	15	\$1,558.43	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	6,586.26	10	\$604.92	0%	0%	\$14.03	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	2,192.94	1	\$54.66	0%	0%	\$23.79	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	850.12	2	\$14.74	0%	0%	\$8.81	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	851.67	15	\$407.29	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	4.21	15	\$0.55	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	38.53	15	\$4.98	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	183.85	10	\$1,838.54	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	26.91	15	\$0.20	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	252.48	15	\$24.12	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	153.30	15	\$29.11	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	153.30	15	\$91.44	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	3.36	15	\$0.74	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	6.73	15	\$3.55	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	6.73	15	\$0.07	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	2,624.68	10	\$617.37	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,718.42	10	\$46.24	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	563.67	10	\$61.04	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	186.82	10	\$96.42	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	149.63	10	\$31.76	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	149.63	10	\$13.02	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	4,686.93	10	\$460.70	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.67	5	\$0.22	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	41.84	1	\$1.76	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	9.91	10	\$53.84	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	42.80	10	\$53.84	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.48	10	\$53.84	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	16.78	10	\$53.84	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	3.91	10	\$53.84	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	303.02	10	\$53.84	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	74.82	10	\$53.84	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	9.23	10	\$53.84	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	28.62	3	\$330.06	3%	11%	\$88.87	2.91	2.97	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	Existing	123.65	3	\$330.06	3%	11%	\$88.87	11.84	11.86	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	4.27	3	\$330.06	3%	11%	\$88.87	2.42	2.46	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	48.49	3	\$330.06	3%	11%	\$88.87	24.25	25.88	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	11.31	3	\$330.06	3%	11%	\$88.87	6.14	6.35	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	Existing	875.39	3	\$330.06	3%	11%	\$88.87	513.46	513.46	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	Existing	216.14	3	\$330.06	3%	11%	\$88.87	126.78	126.78	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	26.67	3	\$330.06	3%	11%	\$88.87	26.98	20.96	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	Existing	55.95	3	\$633.15	0%	0%	\$167.18	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	13.05	3	\$633.15	0%	0%	\$167.18	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	Existing	1,010.06	3	\$633.15	0%	0%	\$167.18	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Process	Commissioning	employee	Existing	249.39	3	\$633.15	0%	0%	\$167.18	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	Existing	30.77	3	\$633.15	0%	0%	\$167.18	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	55.95	3	\$401.94	10%	37%	\$106.13	50.36	53.74	IND_RCX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	13.05	3	\$401.94	10%	37%	\$106.13	12.75	13.19	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	Existing	1,010.06	3	\$401.94	10%	37%	\$106.13	1,066.43	1,066.43	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	Existing	249.39	3	\$401.94	10%	37%	\$106.13	263.30	263.30	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	30.77	3	\$401.94	10%	37%	\$106.13	56.03	43.54	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	80.75	12	\$44.06	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,344.85	11	\$1,047.93	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	1.19	1.19	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	4.26	4.26	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.89	0.89	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.71	0.46	0.46	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.71	0.18	0.18	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.71	0.04	0.04	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.01	0.01	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	2.84	2.84	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.59	0.59	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.15	0.15	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.39	0.39	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.08	0.08	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.15	0.15	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	1.57	1.57	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.76	0.76	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.24	0.24	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.88	0.88	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.06	5	\$0.40	18%	30%	\$1,757.10	0.34	0.34	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.26	0.26	VENT_DCV-Ventilation-7PLN-v5-5
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	2.99	2.99	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	20.76	20.76	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.14	0.14	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.83	0.83	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	2.98	2.98	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.62	0.62	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.09	15	\$0.36	22%	41%	\$524.72	76.25	76.51	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.12	15	\$0.60	22%	41%	\$618.42	106.75	107.12	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.13	0.13	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	8.81	8.90	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	10.87	10.98	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	5.50	5.60	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	4.35	4.43	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.91	4.58	4.66	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,824.05	20	\$970.92	15%	20%	\$38.23	14.09	14.09	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	127.75	15	\$127.99	20%	50%	\$125.71	44.78	44.78	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	New	204.40	15	\$89.58	20%	50%	\$54.99	71.64	71.64	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	597.71	10	\$87.64	9%	38%	\$54.93	160.96	160.96	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	New	448.28	12	\$133.56	9%	38%	(\$23.24)	174.76	174.76	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	448.28	10	\$139.21	9%	38%	\$47.44	163.55	163.55	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	546.58	10	\$54.95	9%	38%	\$47.89	147.19	147.19	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	645.96	10	\$90.92	9%	38%	\$18.25	235.67	235.67	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	993.78	10	\$458.36	9%	38%	\$70.46	362.56	362.56	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	668.87	10	\$50.21	17%	50%	\$38.58	210.14	210.14	CMPAIR_EQPT-Motors-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	24.07	24.07	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	1.04	1.04	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	764.42	10	\$82.70	9%	15%	\$16.53	58.71	58.71	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	New	152.88	10	\$35.90	9%	38%	\$4.42	55.78	55.78	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	382.21	10	\$36.09	18%	75%	\$41.54	205.85	205.85	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	286.66	15	\$220.52	26%	45%	\$96.52	78.30	78.30	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	9.56	10	\$3.39	17%	50%	\$54.13	3.00	3.00	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	57.33	10	\$11.03	17%	50%	\$29.38	18.01	18.01	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	65.19	65.19	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	57.33	15	\$30.32	17%	50%	\$66.36	22.46	22.46	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	New	535.09	6	\$82.80	26%	45%	\$32.76	96.19	96.19	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,755.47	10	\$617.74	25%	45%	\$53.75	449.44	449.44	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	36.36	10	\$15.35	10%	50%	\$64.50	57.79	57.79	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	20.20	10	\$5.45	6%	25%	\$41.21	15.25	15.25	MTR_GRWND>100HP-Motors-7PLN-v5-25

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	303.02	12	\$67.40	16%	25%	\$31.23	121.52	121.52	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	80.81	10	\$20.28	16%	36%	\$38.33	45.26	45.26	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	4,636.18	10	\$576.59	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	6,783.57	15	\$1,558.43	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	6,586.26	10	\$604.92	0%	0%	\$14.03	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,192.94	1	\$54.66	0%	0%	\$23.79	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	850.12	2	\$14.74	0%	0%	\$8.81	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	851.67	15	\$407.29	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	4.21	15	\$0.55	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	38.53	15	\$4.98	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	New	183.85	10	\$1,838.54	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	26.91	15	\$0.20	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	252.48	15	\$24.12	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	153.30	15	\$29.11	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	153.30	15	\$91.44	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	3.36	15	\$0.74	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	6.73	15	\$3.55	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	6.73	15	\$0.07	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGAS-REFrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	2,624.68	10	\$617.37	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,718.42	10	\$46.24	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	New	563.67	10	\$61.04	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	186.82	10	\$96.42	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	149.63	10	\$31.76	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	149.63	10	\$13.02	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	4,686.93	10	\$460.70	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	1.67	5	\$0.22	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPROCESS-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	41.84	1	\$1.76	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	10.50	10	\$53.84	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	New	42.99	10	\$53.84	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.47	10	\$53.84	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	14.24	10	\$53.84	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	3.66	10	\$53.84	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Motors	Transformer - High Efficiency	employee	New	303.02	10	\$53.84	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	New	74.82	10	\$53.84	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	9.07	10	\$53.84	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	New	30.34	3	\$330.06	3%	11%	\$89.04	0.13	0.13	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	New	124.18	3	\$330.06	3%	11%	\$89.04	0.47	0.47	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	New	4.24	3	\$330.06	3%	11%	\$89.04	0.10	0.10	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	41.14	3	\$330.06	3%	11%	\$89.04	0.93	0.94	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	10.58	3	\$330.06	3%	11%	\$89.04	0.24	0.24	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	New	875.39	3	\$330.06	3%	11%	\$89.04	20.23	20.23	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	New	216.14	3	\$330.06	3%	11%	\$89.04	4.99	4.99	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	26.21	3	\$330.06	3%	11%	\$89.04	0.98	0.69	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	New	47.47	3	\$633.15	10%	37%	\$168.01	3.74	3.77	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	New	12.21	3	\$633.15	10%	37%	\$168.01	0.97	0.98	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	New	1,010.06	3	\$633.15	10%	37%	\$168.01	136.26	136.26	IND_SEM-HVAC-AEG-1

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Food Mfg	Process	Commissioning	employee	New	249.39	3	\$633.15	10%	37%	\$168.01	33.64	33.64	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	New	30.24	3	\$633.15	10%	37%	\$168.01	2.47	2.05	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	47.47	3	\$401.94	0%	0%	\$106.65	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	12.21	3	\$401.94	0%	0%	\$106.65	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	New	1,010.06	3	\$401.94	0%	0%	\$106.65	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	New	249.39	3	\$401.94	0%	0%	\$106.65	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	30.24	3	\$401.94	0%	0%	\$106.65	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	80.75	12	\$44.06	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,344.85	11	\$1,047.93	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	5.23	5.32	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	20.51	20.55	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	4.21	4.27	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.79	2.04	2.08	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.79	0.87	0.87	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.79	0.18	0.18	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.04	0.04	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	13.68	13.70	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	2.81	2.85	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.66	0.67	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	1.93	1.93	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.40	0.40	Building Energy Simulation Tool

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Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	1.67	1.71	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.57	13.90	14.21	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	6.75	6.90	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	1.23	1.27	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	5.50	5.68	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.03	5	\$0.40	18%	30%	\$3,337.14	6.15	6.34	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	1.35	1.38	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	24.85	25.57	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	188.91	189.38	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	2.76	2.86	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	11.12	11.33	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	43.64	43.71	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	8.96	9.08	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.06	15	\$0.36	7%	33%	\$843.67	379.49	403.76	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.08	15	\$0.60	7%	33%	\$994.32	531.29	565.27	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	1.97	2.21	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	73.86	75.75	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	75.63	77.57	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.41	91.74	96.62	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	133.78	140.90	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.25	91.45	96.32	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	66,080.8 ₂	20	\$22,718.89	15%	20%	\$38.23	79.16	79.16	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	69.37	15	\$69.50	20%	50%	\$125.71	32.93	32.93	RFG_FHPC-Refrigeration-RTF-v1.3-23
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	111.00	15	\$48.65	20%	50%	\$54.99	52.69	52.69	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	6,534.82	10	\$958.15	9%	38%	\$54.93	2,971.50	2,971.50	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	4,901.11	12	\$1,460.21	9%	38%	(\$23.24)	2,170.51	2,170.51	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	4,901.11	10	\$1,521.98	9%	38%	\$47.44	2,170.51	2,170.51	PUMP_VSD-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	3,474.44	10	\$349.32	9%	38%	\$47.89	1,579.89	1,579.89	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	4,106.15	10	\$577.97	9%	38%	\$18.25	1,818.46	1,818.46	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	6,317.16	10	\$2,913.69	9%	38%	\$70.46	2,797.62	2,797.62	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	6,212.03	10	\$466.34	17%	50%	\$38.58	3,295.51	3,295.51	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	241.63	241.63	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	16.36	16.36	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	7,099.47	10	\$768.07	9%	15%	\$16.53	661.91	661.91	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	1,419.89	10	\$333.43	9%	38%	\$4.42	628.82	628.82	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	3,549.73	10	\$335.18	18%	75%	\$41.54	3,228.25	3,228.25	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	2,662.30	15	\$2,048.03	26%	45%	\$96.52	786.02	786.02	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	88.74	10	\$31.45	17%	50%	\$54.13	47.08	47.08	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	532.46	10	\$102.40	17%	50%	\$29.38	282.47	282.47	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	799.53	799.53	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	532.46	15	\$281.60	17%	50%	\$66.36	282.47	282.47	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	4,969.63	6	\$769.00	26%	45%	\$32.76	1,467.24	1,467.24	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	14,106.19	10	\$4,963.85	25%	45%	\$53.75	4,383.92	4,383.92	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	286.79	10	\$121.10	10%	50%	\$64.50	918.92	918.92	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	159.33	10	\$42.98	6%	25%	\$41.21	242.49	242.49	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	2,389.90	12	\$531.59	16%	25%	\$31.23	1,818.69	1,818.69	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	637.31	10	\$159.92	16%	36%	\$38.33	1,045.73	1,045.73	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	108,483.63	10	\$13,491.77	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	158,731.19	15	\$36,466.18	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	324,035.73	10	\$604.92	0%	0%	\$0.29	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	51,313.32	1	\$54.66	0%	0%	\$1.02	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	19,892.15	2	\$14.74	0%	0%	\$0.38	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	462.48	15	\$221.17	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	40.34	15	\$5.23	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	775.66	15	\$100.19	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	2,010.09	10	\$20,100.88	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	616.61	15	\$4.69	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	137.11	15	\$13.10	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	83.25	15	\$15.81	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	83.25	15	\$49.66	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	77.08	15	\$16.88	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	154.15	15	\$81.42	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	154.15	15	\$1.63	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	21,090.75	10	\$4,960.87	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	21,843.99	10	\$371.52	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,105.22	10	\$227.99	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	402.35	10	\$207.66	15%	40%	\$78.84	763.30	763.30	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	322.27	10	\$68.40	15%	29%	\$32.42	348.48	348.48	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	322.27	10	\$28.04	15%	25%	\$13.29	232.32	232.32	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	37,662.04	10	\$3,701.95	15%	29%	\$15.01	7,900.18	7,900.18	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.61	5	\$0.48	15%	38%	\$31.99	6.37	6.37	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	336.18	1	\$14.12	15%	52%	\$40.10	181.87	181.87	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	38.80	10	\$340.32	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	167.63	10	\$340.32	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	5.78	10	\$340.32	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	88.22	10	\$340.32	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	20.57	10	\$340.32	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	2,389.90	10	\$340.32	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	161.13	10	\$340.32	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	48.00	10	\$340.32	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	112.08	3	\$2,086.30	3%	11%	\$88.90	6.20	6.32	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	484.25	3	\$2,086.30	3%	11%	\$88.90	25.20	25.24	IND_SEM-HVAC-AEG-1
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	16.71	3	\$2,086.30	3%	11%	\$88.90	5.16	5.23	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	254.85	3	\$2,086.30	3%	11%	\$88.90	69.24	73.90	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	59.43	3	\$2,086.30	3%	11%	\$88.90	17.53	18.14	IND_SEM-Lighting-AEG-1

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Paper Mfg	Motors	Strategic Energy Management	employee	Existing	6,904.16	3	\$2,086.30	3%	11%	\$88.90	2,200.45	2,200.45	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	Existing	465.50	3	\$2,086.30	3%	11%	\$88.90	148.36	148.36	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	138.67	3	\$2,086.30	3%	11%	\$88.90	76.22	59.23	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	294.05	3	\$4,223.80	0%	0%	\$168.09	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	68.58	3	\$4,223.80	0%	0%	\$168.09	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	Existing	7,966.35	3	\$4,223.80	0%	0%	\$168.09	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	Existing	537.11	3	\$4,223.80	0%	0%	\$168.09	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	160.00	3	\$4,223.80	0%	0%	\$168.09	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	294.05	3	\$2,681.35	10%	35%	\$106.71	95.12	101.51	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	68.58	3	\$2,681.35	10%	35%	\$106.71	24.08	24.91	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	Existing	7,966.35	3	\$2,681.35	10%	35%	\$106.71	3,022.60	3,022.60	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	Existing	537.11	3	\$2,681.35	10%	35%	\$106.71	203.79	203.79	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	160.00	3	\$2,681.35	10%	35%	\$106.71	104.69	81.36	IND_RCX-Process-AEG-1
Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	882.85	12	\$481.68	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	14,703.34	11	\$11,457.06	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	Existing	579.07	20	\$289.54	0%	100%	\$69.41	3,122.62	3,122.62	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	Existing	39.04	20	\$289.54	0%	100%	\$69.41	210.54	210.54	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	Existing	520.99	20	\$65.12	0%	100%	\$13.02	2,945.89	2,945.89	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	Existing	35.13	20	\$65.12	0%	100%	\$13.02	198.62	198.62	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	Existing	686.30	20	\$1,020.19	0%	100%	\$154.86	3,984.50	3,984.50	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	Existing	46.27	20	\$1,020.19	0%	100%	\$154.86	268.65	268.65	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	1.81	1.81	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	6.48	6.48	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	1.35	1.35	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.67	0.71	0.71	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.67	0.27	0.27	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.67	0.06	0.06	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.01	0.01	Building Energy Simulation Tool

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Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	4.32	4.32	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.90	0.90	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.22	0.22	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.60	0.60	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.12	0.12	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.23	0.23	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	2.39	2.39	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	1.16	1.16	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.37	0.37	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	1.34	1.34	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.03	5	\$0.40	18%	30%	\$3,083.68	0.52	0.52	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.40	0.40	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	4.56	4.56	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	31.63	31.63	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.21	0.22	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	1.27	1.27	STAT_WIFI-All-7PLN-v2-1

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Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	4.54	4.54	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.95	0.95	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.05	15	\$0.36	22%	41%	\$920.89	155.63	156.16	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.07	15	\$0.60	22%	41%	\$1,085.33	217.88	218.63	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.26	0.26	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	17.97	18.16	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	22.19	22.40	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	11.25	11.45	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	8.90	9.06	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.91	9.36	9.53	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	66,080.82	20	\$22,718.89	15%	20%	\$38.23	28.45	28.45	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	69.37	15	\$69.50	20%	50%	\$125.71	9.44	9.44	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Paper Mfg	Process	Refrigeration - System Optimization	employee	New	111.00	15	\$48.65	20%	50%	\$54.99	15.10	15.10	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	6,534.82	10	\$958.15	9%	38%	\$54.93	683.20	683.20	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	4,901.11	12	\$1,460.21	9%	38%	(\$23.24)	741.76	741.76	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	4,901.11	10	\$1,521.98	9%	38%	\$47.44	694.20	694.20	PUMP_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	3,474.44	10	\$349.32	9%	38%	\$47.89	363.24	363.24	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	4,106.15	10	\$577.97	9%	38%	\$18.25	581.60	581.60	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	6,317.16	10	\$2,913.69	9%	38%	\$70.46	894.77	894.77	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	6,212.03	10	\$466.34	17%	50%	\$38.58	757.69	757.69	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	86.79	86.79	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	3.76	3.76	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	7,099.47	10	\$768.07	9%	15%	\$16.53	211.70	211.70	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	1,419.89	10	\$333.43	9%	38%	\$4.42	201.11	201.11	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	3,549.73	10	\$335.18	18%	75%	\$41.54	742.23	742.23	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	2,662.30	15	\$2,048.03	26%	45%	\$96.52	282.34	282.34	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	88.74	10	\$31.45	17%	50%	\$54.13	10.82	10.82	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	532.46	10	\$102.40	17%	50%	\$29.38	64.95	64.95	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	235.05	235.05	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	532.46	15	\$281.60	17%	50%	\$66.36	80.98	80.98	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	New	4,969.63	6	\$769.00	26%	45%	\$32.76	346.83	346.83	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	14,106.19	10	\$4,963.85	25%	45%	\$53.75	1,402.11	1,402.11	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	286.79	10	\$121.10	10%	50%	\$64.50	177.19	177.19	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	159.33	10	\$42.98	6%	25%	\$41.21	46.76	46.76	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	2,389.90	12	\$531.59	16%	25%	\$31.23	372.59	372.59	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	637.31	10	\$159.92	16%	36%	\$38.33	138.81	138.81	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	108,483.63	10	\$13,491.77	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	158,731.19	15	\$36,466.18	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	324,035.73	10	\$604.92	0%	0%	\$0.29	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	51,313.32	1	\$54.66	0%	0%	\$1.02	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	19,892.15	2	\$14.74	0%	0%	\$0.38	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	462.48	15	\$221.17	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	40.34	15	\$5.23	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	775.66	15	\$100.19	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	New	2,010.09	10	\$20,100.88	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	616.61	15	\$4.69	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	137.11	15	\$13.10	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	83.25	15	\$15.81	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	83.25	15	\$49.66	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	77.08	15	\$16.88	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	154.15	15	\$81.42	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	154.15	15	\$1.63	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	21,090.75	10	\$4,960.87	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	21,843.99	10	\$371.52	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	2,105.22	10	\$227.99	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	402.35	10	\$207.66	15%	40%	\$78.84	169.58	169.58	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	322.27	10	\$68.40	15%	29%	\$32.42	77.42	77.42	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	322.27	10	\$28.04	15%	25%	\$13.29	51.61	51.61	PAPER_EFFTREAT-Motors-7PLN-v5-1
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	37,662.04	10	\$3,701.95	15%	29%	\$15.01	2,823.37	2,823.37	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	3.61	5	\$0.48	15%	38%	\$31.99	0.65	0.65	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	336.18	1	\$14.12	15%	52%	\$40.10	93.28	93.28	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	41.14	10	\$340.32	15%	15%	\$17.80	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	168.36	10	\$340.32	15%	15%	\$17.80	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	5.75	10	\$340.32	15%	15%	\$17.80	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	74.85	10	\$340.32	15%	15%	\$17.80	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	19.25	10	\$340.32	15%	15%	\$17.80	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	2,389.90	10	\$340.32	15%	15%	\$17.80	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	New	161.13	10	\$340.32	15%	15%	\$17.80	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	47.17	10	\$340.32	15%	15%	\$17.80	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	New	118.86	3	\$2,086.30	3%	11%	\$89.09	0.27	0.27	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	New	486.36	3	\$2,086.30	3%	11%	\$89.09	1.00	1.00	IND_SEM-HVAC-AEG-1

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Paper Mfg	Ventilation	Strategic Energy Management	employee	New	16.60	3	\$2,086.30	3%	11%	\$89.09	0.21	0.21	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	216.22	3	\$2,086.30	3%	11%	\$89.09	2.65	2.68	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	55.61	3	\$2,086.30	3%	11%	\$89.09	0.68	0.69	IND_SEM-Lighting-AEG-1
Paper Mfg	Motors	Strategic Energy Management	employee	New	6,904.16	3	\$2,086.30	3%	11%	\$89.09	86.74	86.74	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	New	465.50	3	\$2,086.30	3%	11%	\$89.09	5.85	5.85	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	136.28	3	\$2,086.30	3%	11%	\$89.09	2.78	1.96	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	New	249.49	3	\$4,223.80	10%	35%	\$168.75	7.07	7.12	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	New	64.16	3	\$4,223.80	10%	35%	\$168.75	1.82	1.85	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	New	7,966.35	3	\$4,223.80	10%	35%	\$168.75	386.24	386.24	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	New	537.11	3	\$4,223.80	10%	35%	\$168.75	26.04	26.04	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	New	157.24	3	\$4,223.80	10%	35%	\$168.75	4.61	3.83	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	249.49	3	\$2,681.35	0%	0%	\$107.12	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	64.16	3	\$2,681.35	0%	0%	\$107.12	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	New	7,966.35	3	\$2,681.35	0%	0%	\$107.12	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	New	537.11	3	\$2,681.35	0%	0%	\$107.12	0.00	0.00	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	157.24	3	\$2,681.35	0%	0%	\$107.12	0.00	0.00	IND_RCX-Process-AEG-1

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Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	882.85	12	\$481.68	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	14,703.34	11	\$11,457.06	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	New	579.07	20	\$289.54	0%	100%	\$69.41	935.40	935.40	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	New	39.04	20	\$289.54	0%	100%	\$69.41	63.07	63.07	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	New	520.99	20	\$65.12	0%	100%	\$13.02	632.86	632.86	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	New	35.13	20	\$65.12	0%	100%	\$13.02	42.67	42.67	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	New	686.30	20	\$1,020.19	0%	100%	\$154.86	675.87	675.87	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	New	46.27	20	\$1,020.19	0%	100%	\$154.86	45.57	45.57	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.03	0.03	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	0.10	0.10	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.02	0.02	Building Energy Simulation Tool

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Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.76	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.76	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.76	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	0.07	0.07	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.01	0.01	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.55	0.07	0.07	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.16	0.03	0.03	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.03	0.03	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	0.06	5	\$0.40	18%	30%	\$1,712.28	0.03	0.03	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5

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Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	0.12	0.12	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	0.91	0.91	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	0.05	0.05	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	0.21	0.21	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	0.04	0.04	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.11	15	\$0.36	7%	33%	\$432.75	0.43	0.46	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.16	15	\$0.60	7%	33%	\$510.03	0.61	0.65	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.23	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	0.08	0.09	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	0.09	0.09	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.39	0.10	0.11	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.67	0.15	0.16	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,401.50	0.10	0.11	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	250.90	20	\$86.26	15%	20%	\$38.23	0.11	0.11	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	6.80	15	\$6.81	20%	50%	\$125.71	0.33	0.33	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	10.88	15	\$4.77	20%	50%	\$54.99	0.52	0.52	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	338.89	10	\$49.69	9%	38%	\$54.93	15.57	15.57	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	254.16	12	\$75.72	9%	38%	(\$23.24)	11.37	11.37	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	254.16	10	\$78.93	9%	38%	\$47.44	11.37	11.37	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	30.56	10	\$3.07	9%	38%	\$47.89	1.40	1.40	FAN_EQPTF-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	36.11	10	\$5.08	9%	38%	\$18.25	1.62	1.62	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	55.56	10	\$25.62	9%	38%	\$70.46	2.49	2.49	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	155.55	10	\$11.68	17%	50%	\$38.58	8.34	8.34	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	0.61	0.61	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.04	0.04	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1

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Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	177.78	10	\$19.23	9%	15%	\$16.53	1.67	1.67	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	35.56	10	\$8.35	9%	38%	\$4.42	1.59	1.59	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	88.89	10	\$8.39	18%	75%	\$41.54	8.17	8.17	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	66.67	15	\$51.28	26%	45%	\$96.52	1.99	1.99	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.22	10	\$0.79	17%	50%	\$54.13	0.12	0.12	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	13.33	10	\$2.56	17%	50%	\$29.38	0.71	0.71	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	2.02	2.02	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	13.33	15	\$7.05	17%	50%	\$66.36	0.71	0.71	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	Existing	124.44	6	\$19.26	26%	45%	\$32.76	3.71	3.71	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	74.56	10	\$26.24	25%	45%	\$53.75	2.34	2.34	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	5.35	10	\$2.26	10%	50%	\$64.50	1.72	1.72	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	2.97	10	\$0.80	6%	25%	\$41.21	0.45	0.45	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	44.56	12	\$9.91	16%	25%	\$31.23	3.41	3.41	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	11.88	10	\$2.98	16%	36%	\$38.33	1.96	1.96	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	411.90	10	\$51.23	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	602.69	15	\$138.46	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	4,667.79	10	\$604.92	0%	0%	\$19.80	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	194.83	1	\$54.66	0%	0%	\$267.82	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	75.53	2	\$14.74	0%	0%	\$99.14	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	45.34	15	\$21.68	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	5.62	15	\$0.73	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	410.29	15	\$53.00	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	Existing	104.24	10	\$1,042.40	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	1.46	15	\$0.01	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	13.44	15	\$1.28	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	8.16	15	\$1.55	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	8.16	15	\$4.87	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.18	15	\$0.04	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.36	15	\$0.19	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.36	15	\$0.00	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	111.48	10	\$26.22	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	115.46	10	\$1.96	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	66.93	10	\$7.25	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	13.54	10	\$6.99	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	10.84	10	\$2.30	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	10.84	10	\$0.94	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	199.07	10	\$19.57	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	0.12	5	\$0.02	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1.78	1	\$0.07	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	1.86	10	\$7.23	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	8.04	10	\$7.23	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	0.28	10	\$7.23	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	1.00	10	\$7.23	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.23	10	\$7.23	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	44.56	10	\$7.23	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	5.42	10	\$7.23	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.66	10	\$7.23	15%	15%	\$17.79	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	5.38	3	\$44.35	3%	11%	\$89.04	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	23.24	3	\$44.35	3%	11%	\$89.04	0.01	0.01	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	0.80	3	\$44.35	3%	11%	\$89.04	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	2.90	3	\$44.35	3%	11%	\$89.04	0.01	0.01	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	0.68	3	\$44.35	3%	11%	\$89.04	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	128.72	3	\$44.35	3%	11%	\$89.04	0.39	0.39	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	15.66	3	\$44.35	3%	11%	\$89.04	0.05	0.05	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	1.90	3	\$44.35	3%	11%	\$89.04	0.01	0.01	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	3.35	3	\$81.28	0%	0%	\$168.92	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	0.78	3	\$81.28	0%	0%	\$168.92	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	Existing	148.52	3	\$81.28	0%	0%	\$168.92	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	Existing	18.07	3	\$81.28	0%	0%	\$168.92	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	2.19	3	\$81.28	0%	0%	\$168.92	0.00	0.00	IND_SEM-Lighting-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	3.35	3	\$51.60	5%	39%	\$107.24	0.15	0.16	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	0.78	3	\$51.60	5%	39%	\$107.24	0.04	0.04	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	148.52	3	\$51.60	5%	39%	\$107.24	7.71	7.71	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	Existing	18.07	3	\$51.60	5%	39%	\$107.24	0.94	0.94	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	2.19	3	\$51.60	5%	39%	\$107.24	0.20	0.15	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	45.78	12	\$24.98	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	762.49	11	\$594.15	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.89	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.89	0.03	0.03	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.89	0.01	0.01	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.12	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.12	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.12	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.02	0.02	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.01	0.01	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.01	0.01	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.01	0.01	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	0.06	5	\$0.40	18%	30%	\$1,581.11	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.02	0.02	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	0.16	0.16	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.18	0.01	0.01	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.18	0.02	0.02	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.18	0.00	0.00	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.10	15	\$0.36	22%	41%	\$472.36	0.18	0.18	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.13	15	\$0.60	22%	41%	\$556.71	0.25	0.25	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.02	0.02	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.03	0.03	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.01	0.01	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.02	0.01	0.01	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.99	0.01	0.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	250.90	20	\$86.26	15%	20%	\$38.23	0.04	0.04	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	6.80	15	\$6.81	20%	50%	\$125.71	0.09	0.09	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	10.88	15	\$4.77	20%	50%	\$54.99	0.15	0.15	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	338.89	10	\$49.69	9%	38%	\$54.93	3.58	3.58	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	254.16	12	\$75.72	9%	38%	(\$23.24)	3.89	3.89	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	254.16	10	\$78.93	9%	38%	\$47.44	3.64	3.64	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	30.56	10	\$3.07	9%	38%	\$47.89	0.32	0.32	FAN_EQPTF-Motors-UN-v1.0-5

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Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	36.11	10	\$5.08	9%	38%	\$18.25	0.52	0.52	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	55.56	10	\$25.62	9%	38%	\$70.46	0.79	0.79	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	155.55	10	\$11.68	17%	50%	\$38.58	1.92	1.92	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	0.22	0.22	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	177.78	10	\$19.23	9%	15%	\$16.53	0.54	0.54	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	35.56	10	\$8.35	9%	38%	\$4.42	0.51	0.51	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	88.89	10	\$8.39	18%	75%	\$41.54	1.88	1.88	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	66.67	15	\$51.28	26%	45%	\$96.52	0.71	0.71	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.22	10	\$0.79	17%	50%	\$54.13	0.03	0.03	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	13.33	10	\$2.56	17%	50%	\$29.38	0.16	0.16	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	0.59	0.59	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	13.33	15	\$7.05	17%	50%	\$66.36	0.20	0.20	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	New	124.44	6	\$19.26	26%	45%	\$32.76	0.88	0.88	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	74.56	10	\$26.24	25%	45%	\$53.75	0.75	0.75	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	5.35	10	\$2.26	10%	50%	\$64.50	0.34	0.34	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	2.97	10	\$0.80	6%	25%	\$41.21	0.09	0.09	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	44.56	12	\$9.91	16%	25%	\$31.23	0.72	0.72	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	11.88	10	\$2.98	16%	36%	\$38.33	0.27	0.27	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	New	411.90	10	\$51.23	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	New	602.69	15	\$138.46	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	4,667.79	10	\$604.92	0%	0%	\$19.80	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	194.83	1	\$54.66	0%	0%	\$267.82	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	75.53	2	\$14.74	0%	0%	\$99.14	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	45.34	15	\$21.68	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.62	15	\$0.73	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	410.29	15	\$53.00	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	New	104.24	10	\$1,042.40	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	1.46	15	\$0.01	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	13.44	15	\$1.28	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	8.16	15	\$1.55	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	8.16	15	\$4.87	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.18	15	\$0.04	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.36	15	\$0.19	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.36	15	\$0.00	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	111.48	10	\$26.22	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	115.46	10	\$1.96	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	66.93	10	\$7.25	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	13.54	10	\$6.99	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	10.84	10	\$2.30	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	10.84	10	\$0.94	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	199.07	10	\$19.57	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	0.12	5	\$0.02	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1.78	1	\$0.07	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	1.98	10	\$7.23	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	8.08	10	\$7.23	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	0.28	10	\$7.23	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	0.85	10	\$7.23	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	0.22	10	\$7.23	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	44.56	10	\$7.23	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	5.42	10	\$7.23	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	0.64	10	\$7.23	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	5.72	3	\$44.35	3%	11%	\$88.91	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	New	23.34	3	\$44.35	3%	11%	\$88.91	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	0.80	3	\$44.35	3%	11%	\$88.91	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	2.46	3	\$44.35	3%	11%	\$88.91	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	0.63	3	\$44.35	3%	11%	\$88.91	0.00	0.00	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Motors	Strategic Energy Management	employee	New	128.72	3	\$44.35	3%	11%	\$88.91	0.02	0.02	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	New	15.66	3	\$44.35	3%	11%	\$88.91	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	1.86	3	\$44.35	3%	11%	\$88.91	0.00	0.00	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	New	2.84	3	\$81.28	5%	39%	\$169.34	0.01	0.01	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	0.73	3	\$81.28	5%	39%	\$169.34	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	New	148.52	3	\$81.28	5%	39%	\$169.34	0.99	0.99	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	New	18.07	3	\$81.28	5%	39%	\$169.34	0.12	0.12	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	New	2.15	3	\$81.28	5%	39%	\$169.34	0.01	0.01	IND_SEM-Lighting-AEG-1
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	2.84	3	\$51.60	0%	0%	\$107.50	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	0.73	3	\$51.60	0%	0%	\$107.50	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	New	148.52	3	\$51.60	0%	0%	\$107.50	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	New	18.07	3	\$51.60	0%	0%	\$107.50	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	2.15	3	\$51.60	0%	0%	\$107.50	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	New	45.78	12	\$24.98	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1

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Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	762.49	11	\$594.15	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.05	0.05	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	0.20	0.20	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.04	0.04	Building Energy Simulation Tool

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Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.74	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.74	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.74	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	0.13	0.14	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.03	0.03	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.02	0.02	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.53	0.14	0.14	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.16	0.07	0.07	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.01	0.01	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.05	0.06	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	0.09	5	\$0.40	18%	30%	\$1,069.17	0.06	0.06	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	0.24	0.25	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	1.86	1.87	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.74	0.11	0.11	STAT_WIFI-All-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.74	0.43	0.43	STAT_WIFI-All-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.74	0.09	0.09	STAT_WIFI-All-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.18	15	\$0.36	7%	33%	\$270.14	1.09	1.16	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.26	15	\$0.60	7%	33%	\$318.38	1.52	1.62	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.23	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	0.21	0.22	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	0.22	0.22	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.38	0.26	0.28	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.66	0.38	0.40	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,400.80	0.26	0.28	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	644.03	20	\$221.42	15%	20%	\$38.23	0.39	0.39	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	7.19	15	\$7.20	20%	50%	\$125.71	0.19	0.19	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	11.50	15	\$5.04	20%	50%	\$54.99	0.30	0.30	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	101.79	10	\$14.92	9%	38%	\$54.93	2.57	2.57	PUMP_EQPT-Motors-7PLN-v5-1

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Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	76.34	12	\$22.75	9%	38%	(\$23.24)	1.88	1.88	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	76.34	10	\$23.71	9%	38%	\$47.44	1.88	1.88	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	78.79	10	\$7.92	9%	38%	\$47.89	1.99	1.99	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	93.11	10	\$13.11	9%	38%	\$18.25	2.29	2.29	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	143.25	10	\$66.07	9%	38%	\$70.46	3.52	3.52	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	45.12	10	\$3.39	17%	50%	\$38.58	1.33	1.33	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	0.10	0.10	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	51.57	10	\$5.58	9%	15%	\$16.53	0.27	0.27	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	10.31	10	\$2.42	9%	38%	\$4.42	0.25	0.25	CMPAIR_SYSCRTL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	25.78	10	\$2.43	18%	75%	\$41.54	1.30	1.30	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	19.34	15	\$14.88	26%	45%	\$96.52	0.32	0.32	CMPAIR_VSD-Motors-UN-v1.0-3

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Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.64	10	\$0.23	17%	50%	\$54.13	0.02	0.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	3.87	10	\$0.74	17%	50%	\$29.38	0.11	0.11	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	0.32	0.32	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	3.87	15	\$2.05	17%	50%	\$66.36	0.11	0.11	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	Existing	36.10	6	\$5.59	26%	45%	\$32.76	0.59	0.59	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	555.31	10	\$195.41	25%	45%	\$53.75	9.59	9.59	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	7.86	10	\$3.32	10%	50%	\$64.50	1.39	1.39	MTR_GRWND<100HP-Motors-7PLN-v5-17
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	4.37	10	\$1.18	6%	25%	\$41.21	0.37	0.37	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	65.48	12	\$14.57	16%	25%	\$31.23	2.75	2.75	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	17.46	10	\$4.38	16%	36%	\$38.33	1.58	1.58	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,057.29	10	\$131.49	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	1,547.01	15	\$355.40	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	560.83	10	\$604.92	0%	0%	\$164.76	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	500.10	1	\$54.66	0%	0%	\$104.34	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	193.87	2	\$14.74	0%	0%	\$38.62	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	47.91	15	\$22.91	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	34.16	15	\$4.43	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	116.63	15	\$15.06	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	Existing	31.31	10	\$313.11	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	10.75	15	\$0.08	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	14.20	15	\$1.36	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	8.62	15	\$1.64	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	8.62	15	\$5.14	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.34	15	\$0.29	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	2.69	15	\$1.42	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	2.69	15	\$0.03	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	830.26	10	\$195.29	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	859.92	10	\$14.63	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	702.70	10	\$76.10	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	78.60	10	\$40.57	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	62.96	10	\$13.36	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	62.96	10	\$5.48	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	1,482.61	10	\$145.73	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	0.70	5	\$0.09	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	13.23	1	\$0.56	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	6.94	10	\$16.86	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	30.00	10	\$16.86	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	1.04	10	\$16.86	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	4.59	10	\$16.86	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.07	10	\$16.86	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	65.48	10	\$16.86	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	31.48	10	\$16.86	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	4.21	10	\$16.86	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	20.06	3	\$103.37	3%	11%	\$88.55	0.01	0.01	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	86.66	3	\$103.37	3%	11%	\$88.55	0.02	0.02	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	2.99	3	\$103.37	3%	11%	\$88.55	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	13.25	3	\$103.37	3%	11%	\$88.55	0.02	0.02	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	3.09	3	\$103.37	3%	11%	\$88.55	0.00	0.00	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	189.18	3	\$103.37	3%	11%	\$88.55	0.32	0.32	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	90.94	3	\$103.37	3%	11%	\$88.55	0.15	0.15	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	12.16	3	\$103.37	3%	11%	\$88.55	0.04	0.03	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	15.29	3	\$163.04	0%	0%	\$163.37	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	3.56	3	\$163.04	0%	0%	\$163.37	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	218.28	3	\$163.04	0%	0%	\$163.37	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	Existing	104.93	3	\$163.04	0%	0%	\$163.37	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	14.03	3	\$163.04	0%	0%	\$163.37	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	15.29	3	\$103.50	10%	40%	\$103.71	0.33	0.35	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	3.56	3	\$103.50	10%	40%	\$103.71	0.08	0.09	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	218.28	3	\$103.50	10%	40%	\$103.71	5.47	5.47	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	104.93	3	\$103.50	10%	40%	\$103.71	2.63	2.63	IND_RCX-Process-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	14.03	3	\$103.50	10%	40%	\$103.71	0.61	0.47	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	13.75	12	\$7.50	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	229.03	11	\$178.46	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.88	0.02	0.02	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.88	0.07	0.07	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.88	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,206.66	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,206.66	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,206.66	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.04	0.04	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool

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Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.01	0.01	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.02	0.02	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.01	0.01	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.01	0.01	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	0.10	5	\$0.40	18%	30%	\$986.68	0.01	0.01	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.61	0.05	0.05	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.61	0.33	0.33	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1

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Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.16	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.16	0.05	0.05	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.16	0.01	0.01	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.36	22%	41%	\$294.87	0.45	0.45	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.22	15	\$0.60	22%	41%	\$347.52	0.63	0.64	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.05	0.05	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.06	0.06	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.03	0.03	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.02	0.03	0.03	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,581.05	0.03	0.03	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	644.03	20	\$221.42	15%	20%	\$38.23	0.14	0.14	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	7.19	15	\$7.20	20%	50%	\$125.71	0.05	0.05	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	11.50	15	\$5.04	20%	50%	\$54.99	0.09	0.09	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	101.79	10	\$14.92	9%	38%	\$54.93	0.59	0.59	PUMP_EQPT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	76.34	12	\$22.75	9%	38%	(\$23.24)	0.64	0.64	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	76.34	10	\$23.71	9%	38%	\$47.44	0.60	0.60	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	78.79	10	\$7.92	9%	38%	\$47.89	0.46	0.46	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	93.11	10	\$13.11	9%	38%	\$18.25	0.73	0.73	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	143.25	10	\$66.07	9%	38%	\$70.46	1.13	1.13	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	45.12	10	\$3.39	17%	50%	\$38.58	0.31	0.31	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	0.04	0.04	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1

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Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	51.57	10	\$5.58	9%	15%	\$16.53	0.09	0.09	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	10.31	10	\$2.42	9%	38%	\$4.42	0.08	0.08	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	25.78	10	\$2.43	18%	75%	\$41.54	0.30	0.30	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	19.34	15	\$14.88	26%	45%	\$96.52	0.11	0.11	CMPAIR_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.64	10	\$0.23	17%	50%	\$54.13	0.00	0.00	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	3.87	10	\$0.74	17%	50%	\$29.38	0.03	0.03	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	0.09	0.09	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	3.87	15	\$2.05	17%	50%	\$66.36	0.03	0.03	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	New	36.10	6	\$5.59	26%	45%	\$32.76	0.14	0.14	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	555.31	10	\$195.41	25%	45%	\$53.75	3.07	3.07	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	7.86	10	\$3.32	10%	50%	\$64.50	0.28	0.28	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	4.37	10	\$1.18	6%	25%	\$41.21	0.07	0.07	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	65.48	12	\$14.57	16%	25%	\$31.23	0.59	0.59	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	17.46	10	\$4.38	16%	36%	\$38.33	0.22	0.22	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	New	1,057.29	10	\$131.49	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	New	1,547.01	15	\$355.40	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	560.83	10	\$604.92	0%	0%	\$164.76	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	500.10	1	\$54.66	0%	0%	\$104.34	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	193.87	2	\$14.74	0%	0%	\$38.62	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	47.91	15	\$22.91	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	34.16	15	\$4.43	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	116.63	15	\$15.06	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	New	31.31	10	\$313.11	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1

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Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	10.75	15	\$0.08	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	14.20	15	\$1.36	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	8.62	15	\$1.64	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	8.62	15	\$5.14	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.34	15	\$0.29	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	2.69	15	\$1.42	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	2.69	15	\$0.03	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	830.26	10	\$195.29	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	859.92	10	\$14.63	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	702.70	10	\$76.10	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	78.60	10	\$40.57	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	62.96	10	\$13.36	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1

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Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	62.96	10	\$5.48	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	1,482.61	10	\$145.73	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	0.70	5	\$0.09	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	13.23	1	\$0.56	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	7.40	10	\$16.86	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	30.13	10	\$16.86	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	1.03	10	\$16.86	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	3.89	10	\$16.86	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	1.00	10	\$16.86	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	65.48	10	\$16.86	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	31.48	10	\$16.86	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	4.14	10	\$16.86	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	21.37	3	\$103.37	3%	11%	\$88.47	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	87.03	3	\$103.37	3%	11%	\$88.47	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	2.97	3	\$103.37	3%	11%	\$88.47	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	11.24	3	\$103.37	3%	11%	\$88.47	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	2.89	3	\$103.37	3%	11%	\$88.47	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	189.18	3	\$103.37	3%	11%	\$88.47	0.01	0.01	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	90.94	3	\$103.37	3%	11%	\$88.47	0.01	0.01	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	11.95	3	\$103.37	3%	11%	\$88.47	0.00	0.00	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	12.97	3	\$163.04	10%	40%	\$164.39	0.02	0.02	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	3.33	3	\$163.04	10%	40%	\$164.39	0.01	0.01	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	New	218.28	3	\$163.04	10%	40%	\$164.39	0.70	0.70	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	New	104.93	3	\$163.04	10%	40%	\$164.39	0.34	0.34	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	13.79	3	\$163.04	10%	40%	\$164.39	0.03	0.02	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	12.97	3	\$103.50	0%	0%	\$104.36	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	3.33	3	\$103.50	0%	0%	\$104.36	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	218.28	3	\$103.50	0%	0%	\$104.36	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	104.93	3	\$103.50	0%	0%	\$104.36	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	13.79	3	\$103.50	0%	0%	\$104.36	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	13.75	12	\$7.50	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	229.03	11	\$178.46	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Stone Clay Glass Products	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.77	0.78	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	3.01	3.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.62	0.63	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.78	0.30	0.30	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.78	0.13	0.13	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.78	0.03	0.03	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	2.01	2.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.41	0.42	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.10	0.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.28	0.28	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.06	0.06	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.24	0.25	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.56	2.04	2.09	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	0.99	1.01	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.18	0.19	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.81	0.83	AEG-BEST

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Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.05	5	\$0.40	18%	30%	\$1,922.01	0.90	0.93	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.20	0.20	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	3.65	3.75	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	27.72	27.79	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.41	0.42	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	1.63	1.66	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	6.40	6.41	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	1.32	1.33	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.36	7%	33%	\$485.88	14.33	15.24	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.60	7%	33%	\$572.65	20.06	21.34	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.07	0.08	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	2.79	2.86	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	2.86	2.93	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.40	3.46	3.65	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	5.05	5.32	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.13	3.45	3.64	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	3,760.03	20	\$1,292.72	15%	20%	\$38.23	3.28	3.28	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	10.93	15	\$10.96	20%	50%	\$125.71	2.10	2.10	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	17.49	15	\$7.67	20%	50%	\$54.99	3.36	3.36	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	47.40	10	\$6.95	9%	38%	\$54.93	8.71	8.71	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	35.55	12	\$10.59	9%	38%	(\$23.24)	6.36	6.36	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	35.55	10	\$11.04	9%	38%	\$47.44	6.36	6.36	PUMP_VSD-Motors-UN-v1.0-3

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Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	12.45	10	\$1.25	9%	38%	\$47.89	2.29	2.29	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	14.72	10	\$2.07	9%	38%	\$18.25	2.63	2.63	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	22.64	10	\$10.44	9%	38%	\$70.46	4.05	4.05	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	83.80	10	\$6.29	17%	50%	\$38.58	17.96	17.96	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	1.32	1.32	CMPAIR_HTCMPDESDRY-Motors-MEMD-v.2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.09	0.09	CMPAIR_RFRGDRY-Motors-MEMD-v.2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	95.77	10	\$10.36	9%	15%	\$16.53	3.61	3.61	E3T
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	19.15	10	\$4.50	9%	38%	\$4.42	3.43	3.43	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	47.89	10	\$4.52	18%	75%	\$41.54	17.60	17.60	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	35.91	15	\$27.63	26%	45%	\$96.52	4.28	4.28	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.20	10	\$0.42	17%	50%	\$54.13	0.26	0.26	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	7.18	10	\$1.38	17%	50%	\$29.38	1.54	1.54	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3

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Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	4.36	4.36	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	7.18	15	\$3.80	17%	50%	\$66.36	1.54	1.54	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	67.04	6	\$10.37	26%	45%	\$32.76	8.00	8.00	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	216.57	10	\$76.21	25%	45%	\$53.75	27.19	27.19	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	3.20	10	\$1.35	10%	50%	\$64.50	4.13	4.13	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.78	10	\$0.48	6%	25%	\$41.21	1.09	1.09	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	26.63	12	\$5.92	16%	25%	\$31.23	8.18	8.18	2015-mdu-irp-report--volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	7.10	10	\$1.78	16%	36%	\$38.33	4.71	4.71	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	6,172.77	10	\$767.69	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	9,031.87	15	\$2,074.94	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,305.88	10	\$604.92	0%	0%	\$70.76	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	2,919.75	1	\$54.66	0%	0%	\$17.87	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	1,131.87	2	\$14.74	0%	0%	\$6.62	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	72.90	15	\$34.86	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	26.21	15	\$3.40	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	35.70	15	\$4.61	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	14.58	10	\$145.81	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	31.70	15	\$0.24	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	21.61	15	\$2.06	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	13.12	15	\$2.49	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	13.12	15	\$7.83	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	3.96	15	\$0.87	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	7.92	15	\$4.19	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	7.92	15	\$0.08	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1

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Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	323.80	10	\$76.16	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	335.37	10	\$5.70	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	297.23	10	\$32.19	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	45.29	10	\$23.38	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	36.28	10	\$7.70	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	36.28	10	\$3.16	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	578.22	10	\$56.84	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.41	5	\$0.05	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.16	1	\$0.22	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	14.10	10	\$15.98	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	60.93	10	\$15.98	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	2.10	10	\$15.98	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	8.25	10	\$15.98	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.92	10	\$15.98	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	26.63	10	\$15.98	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	18.14	10	\$15.98	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	4.92	10	\$15.98	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	40.74	3	\$97.95	3%	11%	\$88.91	0.09	0.09	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	176.03	3	\$97.95	3%	11%	\$88.91	0.35	0.35	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	6.07	3	\$97.95	3%	11%	\$88.91	0.07	0.07	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	23.83	3	\$97.95	3%	11%	\$88.91	0.25	0.27	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	5.56	3	\$97.95	3%	11%	\$88.91	0.06	0.07	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	76.94	3	\$97.95	3%	11%	\$88.91	0.94	0.94	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	52.40	3	\$97.95	3%	11%	\$88.91	0.64	0.64	IND_SEM-Process-AEG-1

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Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	14.20	3	\$97.95	3%	11%	\$88.91	0.30	0.23	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	27.49	3	\$87.75	0%	0%	\$156.06	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	6.41	3	\$87.75	0%	0%	\$156.06	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	88.78	3	\$87.75	0%	0%	\$156.06	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	60.46	3	\$87.75	0%	0%	\$156.06	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	16.39	3	\$87.75	0%	0%	\$156.06	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	27.49	3	\$55.71	5%	39%	\$99.07	4.88	5.21	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	6.41	3	\$55.71	5%	39%	\$99.07	1.24	1.28	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	88.78	3	\$55.71	5%	39%	\$99.07	18.50	18.50	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	60.46	3	\$55.71	5%	39%	\$99.07	12.60	12.60	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	16.39	3	\$55.71	5%	39%	\$99.07	5.89	4.58	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	6.40	12	\$3.49	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	106.66	11	\$83.11	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	0.27	0.27	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	0.95	0.95	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.20	0.20	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.57	0.10	0.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.57	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.57	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.64	0.64	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.13	0.13	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.03	0.03	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.09	0.09	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.02	0.02	Building Energy Simulation Tool

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Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.03	0.03	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.35	0.35	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.17	0.17	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.05	0.05	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.20	0.20	AEG-BEST
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.05	5	\$0.40	18%	30%	\$1,775.81	0.08	0.08	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.06	0.06	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.67	0.67	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	4.67	4.67	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.19	0.19	STAT_WIFI-All-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	0.67	0.67	STAT_WIFI-All-7PLN-v2-1

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Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.14	0.14	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.09	15	\$0.36	22%	41%	\$530.35	5.88	5.90	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.12	15	\$0.60	22%	41%	\$625.06	8.23	8.26	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.68	0.69	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.84	0.85	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.43	0.43	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	0.34	0.34	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.93	0.35	0.36	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	3,760.03	20	\$1,292.72	15%	20%	\$38.23	1.18	1.18	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	10.93	15	\$10.96	20%	50%	\$125.71	0.60	0.60	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	17.49	15	\$7.67	20%	50%	\$54.99	0.96	0.96	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	47.40	10	\$6.95	9%	38%	\$54.93	2.00	2.00	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	35.55	12	\$10.59	9%	38%	(\$23.24)	2.17	2.17	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	35.55	10	\$11.04	9%	38%	\$47.44	2.03	2.03	PUMP_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	12.45	10	\$1.25	9%	38%	\$47.89	0.53	0.53	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	14.72	10	\$2.07	9%	38%	\$18.25	0.84	0.84	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	22.64	10	\$10.44	9%	38%	\$70.46	1.30	1.30	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	83.80	10	\$6.29	17%	50%	\$38.58	4.13	4.13	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	0.47	0.47	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.02	0.02	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	95.77	10	\$10.36	9%	15%	\$16.53	1.15	1.15	E3T

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Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	19.15	10	\$4.50	9%	38%	\$4.42	1.10	1.10	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	47.89	10	\$4.52	18%	75%	\$41.54	4.05	4.05	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	35.91	15	\$27.63	26%	45%	\$96.52	1.54	1.54	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.20	10	\$0.42	17%	50%	\$54.13	0.06	0.06	CMPAIR_LPDLT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	7.18	10	\$1.38	17%	50%	\$29.38	0.35	0.35	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	1.28	1.28	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	7.18	15	\$3.80	17%	50%	\$66.36	0.44	0.44	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	67.04	6	\$10.37	26%	45%	\$32.76	1.89	1.89	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	216.57	10	\$76.21	25%	45%	\$53.75	8.70	8.70	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	3.20	10	\$1.35	10%	50%	\$64.50	0.80	0.80	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.78	10	\$0.48	6%	25%	\$41.21	0.21	0.21	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	26.63	12	\$5.92	16%	25%	\$31.23	1.68	1.68	2015-mdu-irp-report--volume-iii.pdf

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Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	7.10	10	\$1.78	16%	36%	\$38.33	0.63	0.63	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	6,172.77	10	\$767.69	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	9,031.87	15	\$2,074.94	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,305.88	10	\$604.92	0%	0%	\$70.76	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,919.75	1	\$54.66	0%	0%	\$17.87	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	1,131.87	2	\$14.74	0%	0%	\$6.62	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	72.90	15	\$34.86	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	26.21	15	\$3.40	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	35.70	15	\$4.61	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	14.58	10	\$145.81	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	31.70	15	\$0.24	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	21.61	15	\$2.06	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	13.12	15	\$2.49	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	13.12	15	\$7.83	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	3.96	15	\$0.87	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	7.92	15	\$4.19	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	7.92	15	\$0.08	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	323.80	10	\$76.16	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	335.37	10	\$5.70	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	297.23	10	\$32.19	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	45.29	10	\$23.38	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	36.28	10	\$7.70	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	36.28	10	\$3.16	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	578.22	10	\$56.84	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1

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Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.41	5	\$0.05	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.16	1	\$0.22	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	14.96	10	\$15.98	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	61.20	10	\$15.98	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	2.09	10	\$15.98	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	7.00	10	\$15.98	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	1.80	10	\$15.98	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	26.63	10	\$15.98	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	18.14	10	\$15.98	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	4.83	10	\$15.98	15%	15%	\$17.69	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	43.22	3	\$97.95	3%	11%	\$88.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	176.79	3	\$97.95	3%	11%	\$88.52	0.01	0.01	IND_SEM-HVAC-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	6.03	3	\$97.95	3%	11%	\$88.52	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	20.21	3	\$97.95	3%	11%	\$88.52	0.01	0.01	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	5.20	3	\$97.95	3%	11%	\$88.52	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	76.94	3	\$97.95	3%	11%	\$88.52	0.04	0.04	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	52.40	3	\$97.95	3%	11%	\$88.52	0.03	0.03	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	13.96	3	\$97.95	3%	11%	\$88.52	0.01	0.01	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	23.32	3	\$87.75	5%	39%	\$158.72	0.36	0.37	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	6.00	3	\$87.75	5%	39%	\$158.72	0.09	0.09	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	New	88.78	3	\$87.75	5%	39%	\$158.72	2.36	2.36	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	New	60.46	3	\$87.75	5%	39%	\$158.72	1.61	1.61	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	16.10	3	\$87.75	5%	39%	\$158.72	0.26	0.22	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	23.32	3	\$55.71	0%	0%	\$100.76	0.00	0.00	IND_RCX-Motors-AEG-1

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Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	6.00	3	\$55.71	0%	0%	\$100.76	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	88.78	3	\$55.71	0%	0%	\$100.76	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	60.46	3	\$55.71	0%	0%	\$100.76	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	16.10	3	\$55.71	0%	0%	\$100.76	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	6.40	12	\$3.49	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	106.66	11	\$83.11	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.57	0.58	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	2.24	2.25	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.46	0.47	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.78	0.22	0.23	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.78	0.09	0.09	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.78	0.02	0.02	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.00	0.00	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	1.49	1.50	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.31	0.31	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.07	0.07	Building Energy Simulation Tool

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Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.21	0.21	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.04	0.04	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.18	0.19	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.56	1.52	1.55	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	0.74	0.75	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.13	0.14	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.60	0.62	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.04	5	\$0.40	18%	30%	\$2,634.34	0.67	0.69	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.15	0.15	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	2.72	2.79	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	20.64	20.70	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.30	0.31	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	1.22	1.24	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	4.77	4.78	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	0.98	0.99	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.07	15	\$0.36	7%	33%	\$665.93	13.66	14.53	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.10	15	\$0.60	7%	33%	\$784.84	19.12	20.34	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.07	0.08	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	2.66	2.73	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	2.72	2.79	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.40	3.30	3.48	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	4.81	5.07	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.02	3.29	3.46	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,306.12	20	\$449.05	15%	20%	\$38.23	4.69	4.69	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$47.35	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$33.14	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,094.01	10	\$160.41	9%	38%	\$54.93	132.66	132.66	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	820.51	12	\$244.46	9%	38%	(\$23.24)	96.90	96.90	PUMP_SYSOPT-Motors-UN-v1.0-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	820.51	10	\$254.80	9%	38%	\$47.44	96.90	96.90	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	1,481.40	10	\$148.94	9%	38%	\$47.89	179.63	179.63	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	1,750.75	10	\$246.43	9%	38%	\$18.25	206.76	206.76	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	2,693.46	10	\$1,242.32	9%	38%	\$70.46	318.09	318.09	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	100.84	10	\$7.57	17%	50%	\$38.58	14.27	14.27	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	1.05	1.05	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.07	0.07	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	115.25	10	\$12.47	9%	15%	\$16.53	2.87	2.87	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	23.05	10	\$5.41	9%	38%	\$4.42	2.72	2.72	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	57.62	10	\$5.44	18%	75%	\$41.54	13.97	13.97	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	43.22	15	\$33.25	26%	45%	\$96.52	3.40	3.40	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.44	10	\$0.51	17%	50%	\$54.13	0.20	0.20	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	8.64	10	\$1.66	17%	50%	\$29.38	1.22	1.22	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	3.46	3.46	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	8.64	15	\$4.57	17%	50%	\$66.36	1.22	1.22	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Wastewater	Motors	Compressed Air - End Use Optimization	employee	Existing	80.67	6	\$12.48	26%	45%	\$32.76	6.35	6.35	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	241.00	10	\$84.81	25%	45%	\$53.75	19.97	19.97	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	37.65	10	\$15.90	10%	50%	\$64.50	32.12	32.12	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	20.92	10	\$5.64	6%	25%	\$41.21	8.48	8.48	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	313.74	12	\$69.78	16%	25%	\$31.23	63.58	63.58	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	83.66	10	\$20.99	16%	36%	\$38.33	36.56	36.56	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	Existing	2,144.23	10	\$266.67	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	Existing	3,137.39	15	\$720.77	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	4,822.02	10	\$604.92	0%	0%	\$19.16	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,014.23	1	\$54.66	0%	0%	\$51.45	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	393.18	2	\$14.74	0%	0%	\$19.04	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$150.68	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	190.60	15	\$24.62	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Motors	Automatic Milker Takeoffs	Cows	Existing	336.51	10	\$3,365.15	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$1.92	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$8.92	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$10.77	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$33.83	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$6.90	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$33.29	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$0.67	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	360.34	10	\$84.76	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	373.20	10	\$6.35	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$30.71	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	199.72	10	\$103.08	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	159.97	10	\$33.95	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	159.97	10	\$13.92	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	643.46	10	\$63.25	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	1.79	5	\$0.24	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.74	1	\$0.24	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	15.92	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	68.79	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	2.37	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	11.92	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.78	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	313.74	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	Existing	16.00	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	10.67	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	Existing	45.99	3	\$315.72	3%	11%	\$88.64	0.55	0.56	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	Existing	198.72	3	\$315.72	3%	11%	\$88.64	2.23	2.23	IND_SEM-HVAC-AEG-1
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	6.86	3	\$315.72	3%	11%	\$88.64	0.46	0.46	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	34.43	3	\$315.72	3%	11%	\$88.64	2.02	2.15	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	8.03	3	\$315.72	3%	11%	\$88.64	0.51	0.53	IND_SEM-Lighting-AEG-1

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Wastewater	Motors	Strategic Energy Management	employee	Existing	906.35	3	\$315.72	3%	11%	\$88.64	62.27	62.27	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	Existing	46.21	3	\$315.72	3%	11%	\$88.64	3.18	3.18	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	30.83	3	\$315.72	3%	11%	\$88.64	3.65	2.84	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	Existing	39.73	3	\$546.99	0%	0%	\$165.28	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	Existing	9.26	3	\$546.99	0%	0%	\$165.28	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	Existing	1,045.79	3	\$546.99	0%	0%	\$165.28	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	Existing	53.32	3	\$546.99	0%	0%	\$165.28	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	Existing	35.58	3	\$546.99	0%	0%	\$165.28	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	39.73	3	\$347.24	5%	39%	\$104.92	4.65	4.97	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	9.26	3	\$347.24	5%	39%	\$104.92	1.18	1.22	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	Existing	1,045.79	3	\$347.24	5%	39%	\$104.92	143.71	143.71	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	Existing	53.32	3	\$347.24	5%	39%	\$104.92	7.33	7.33	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	35.58	3	\$347.24	5%	39%	\$104.92	8.43	6.55	IND_RCX-Process-AEG-1
Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	147.80	12	\$80.64	15%	35%	\$46.53	12.25	12.25	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	2,461.53	11	\$1,918.06	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	0.20	0.20	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	0.71	0.71	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.15	0.15	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.49	0.08	0.08	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.49	0.03	0.03	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.49	0.01	0.01	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool

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Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.47	0.47	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.10	0.10	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.02	0.02	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.07	0.07	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.01	0.01	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.03	0.03	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.26	0.26	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.13	0.13	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.04	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.15	0.15	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.04	5	\$0.40	18%	30%	\$2,433.71	0.06	0.06	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.04	0.04	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.50	0.50	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	3.49	3.49	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.14	0.14	STAT_WIFI-All-7PLN-v2-1

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Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	0.50	0.50	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.10	0.10	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.36	22%	41%	\$726.88	5.61	5.63	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.09	15	\$0.60	22%	41%	\$856.68	7.86	7.88	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.65	0.65	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.80	0.81	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.41	0.42	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	0.32	0.33	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.94	0.34	0.35	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,306.12	20	\$449.05	15%	20%	\$38.23	1.69	1.69	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$47.35	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$33.14	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	1,094.01	10	\$160.41	9%	38%	\$54.93	30.50	30.50	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	New	820.51	12	\$244.46	9%	38%	(\$23.24)	33.11	33.11	PUMP_SYSOPT-Motors-UN-v1.0-5
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	820.51	10	\$254.80	9%	38%	\$47.44	30.99	30.99	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	1,481.40	10	\$148.94	9%	38%	\$47.89	41.30	41.30	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	New	1,750.75	10	\$246.43	9%	38%	\$18.25	66.13	66.13	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	2,693.46	10	\$1,242.32	9%	38%	\$70.46	101.73	101.73	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	100.84	10	\$7.57	17%	50%	\$38.58	3.28	3.28	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	0.38	0.38	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.02	0.02	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	115.25	10	\$12.47	9%	15%	\$16.53	0.92	0.92	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	New	23.05	10	\$5.41	9%	38%	\$4.42	0.87	0.87	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	57.62	10	\$5.44	18%	75%	\$41.54	3.21	3.21	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	43.22	15	\$33.25	26%	45%	\$96.52	1.22	1.22	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.44	10	\$0.51	17%	50%	\$54.13	0.05	0.05	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	8.64	10	\$1.66	17%	50%	\$29.38	0.28	0.28	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	1.02	1.02	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	8.64	15	\$4.57	17%	50%	\$66.36	0.35	0.35	CMPAIR_STORAGE-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - End Use Optimization	employee	New	80.67	6	\$12.48	26%	45%	\$32.76	1.50	1.50	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	241.00	10	\$84.81	25%	45%	\$53.75	6.39	6.39	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	37.65	10	\$15.90	10%	50%	\$64.50	6.24	6.24	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	20.92	10	\$5.64	6%	25%	\$41.21	1.65	1.65	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	313.74	12	\$69.78	16%	25%	\$31.23	13.12	13.12	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	83.66	10	\$20.99	16%	36%	\$38.33	4.89	4.89	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	New	2,144.23	10	\$266.67	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	New	3,137.39	15	\$720.77	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	4,822.02	10	\$604.92	0%	0%	\$19.16	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,014.23	1	\$54.66	0%	0%	\$51.45	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	393.18	2	\$14.74	0%	0%	\$19.04	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$150.68	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	190.60	15	\$24.62	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Wastewater	Motors	Automatic Milker Takeoffs	Cows	New	336.51	10	\$3,365.15	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$1.92	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$8.92	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$10.77	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$33.83	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$6.90	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$33.29	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$0.67	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	New	360.34	10	\$84.76	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	373.20	10	\$6.35	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$30.71	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Wastewater	Process	Paper: Premium Control Large Material	employee	New	199.72	10	\$103.08	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	159.97	10	\$33.95	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	159.97	10	\$13.92	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	643.46	10	\$63.25	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	New	1.79	5	\$0.24	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.74	1	\$0.24	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	New	16.90	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	New	69.09	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	New	2.36	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	10.11	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	2.60	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	New	313.74	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	New	16.00	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	10.49	10	\$51.50	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	New	48.82	3	\$315.72	3%	11%	\$88.62	0.02	0.02	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	New	199.59	3	\$315.72	3%	11%	\$88.62	0.09	0.09	IND_SEM-HVAC-AEG-1

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Wastewater	Ventilation	Strategic Energy Management	employee	New	6.81	3	\$315.72	3%	11%	\$88.62	0.02	0.02	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	29.21	3	\$315.72	3%	11%	\$88.62	0.08	0.08	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	7.51	3	\$315.72	3%	11%	\$88.62	0.02	0.02	IND_SEM-Lighting-AEG-1
Wastewater	Motors	Strategic Energy Management	employee	New	906.35	3	\$315.72	3%	11%	\$88.62	2.46	2.46	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	New	46.21	3	\$315.72	3%	11%	\$88.62	0.13	0.13	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	30.30	3	\$315.72	3%	11%	\$88.62	0.13	0.09	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	New	33.71	3	\$546.99	5%	39%	\$166.08	0.35	0.35	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	New	8.67	3	\$546.99	5%	39%	\$166.08	0.09	0.09	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	New	1,045.79	3	\$546.99	5%	39%	\$166.08	18.37	18.37	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	New	53.32	3	\$546.99	5%	39%	\$166.08	0.19	0.19	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	New	34.96	3	\$546.99	5%	39%	\$166.08	0.37	0.31	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	New	33.71	3	\$347.24	0%	0%	\$105.43	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	New	8.67	3	\$347.24	0%	0%	\$105.43	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	New	1,045.79	3	\$347.24	0%	0%	\$105.43	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	New	53.32	3	\$347.24	0%	0%	\$105.43	0.00	0.00	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	New	34.96	3	\$347.24	0%	0%	\$105.43	0.00	0.00	IND_RCX-Process-AEG-1

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Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	New	147.80	12	\$80.64	15%	35%	\$46.53	4.19	4.19	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	2,461.53	11	\$1,918.06	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.61	0.62	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	2.41	2.41	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.49	0.50	Building Energy Simulation Tool

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Water	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.79	0.24	0.24	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.79	0.10	0.10	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.79	0.02	0.02	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	1.60	1.61	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.33	0.33	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.08	0.08	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.23	0.23	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.05	0.05	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.20	0.20	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.57	1.63	1.67	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	0.79	0.81	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.14	0.15	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.65	0.67	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	Existing	0.05	5	\$0.40	18%	30%	\$1,943.72	0.72	0.74	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.16	0.16	VENT_DCV-Ventilation-7PLN-v5-5

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Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	2.92	3.00	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	22.16	22.22	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.32	0.34	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	1.30	1.33	STAT_WIFI-All-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	5.12	5.13	STAT_WIFI-All-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	1.05	1.07	STAT_WIFI-All-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.36	7%	33%	\$491.39	14.65	15.59	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.60	7%	33%	\$579.14	20.52	21.83	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.08	0.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	2.85	2.93	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	2.92	3.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.41	3.54	3.73	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	5.17	5.44	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.25	3.53	3.72	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	400.08	20	\$137.55	15%	20%	\$38.23	5.03	5.03	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$14.50	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$10.15	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,210.59	10	\$177.50	9%	38%	\$54.93	513.78	513.78	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	Existing	907.94	12	\$270.51	9%	38%	(\$23.24)	375.29	375.29	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	907.94	10	\$281.95	9%	38%	\$47.44	375.29	375.29	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$2.13	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$3.53	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$17.81	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	30.89	10	\$2.32	17%	50%	\$38.58	15.29	15.29	CMPAIR_EQPT-Motors-7PLN-v5-2
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	1.12	1.12	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.08	0.08	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

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Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	35.30	10	\$3.82	9%	15%	\$16.53	3.07	3.07	E3T
Water	Motors	Compressed Air - System Controls	employee	Existing	7.06	10	\$1.66	9%	38%	\$4.42	2.92	2.92	CMPAIR_SYSCtrl-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	17.65	10	\$1.67	18%	75%	\$41.54	14.98	14.98	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	13.24	15	\$10.18	26%	45%	\$96.52	3.65	3.65	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.44	10	\$0.16	17%	50%	\$54.13	0.22	0.22	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	2.65	10	\$0.51	17%	50%	\$29.38	1.31	1.31	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	3.71	3.71	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	2.65	15	\$1.40	17%	50%	\$66.36	1.31	1.31	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	Existing	24.71	6	\$3.82	26%	45%	\$32.76	6.81	6.81	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	49.18	10	\$17.31	25%	45%	\$53.75	14.26	14.26	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	14.42	10	\$6.09	10%	50%	\$64.50	34.49	34.49	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	8.01	10	\$2.16	6%	25%	\$41.21	9.10	9.10	MTR_GRWND>100HP-Motors-7PLN-v5-25
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	120.13	12	\$26.72	16%	25%	\$31.23	68.25	68.25	2015-mdu-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	32.03	10	\$8.04	16%	36%	\$38.33	39.25	39.25	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	Existing	656.80	10	\$81.68	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Water	Miscellaneous	Circulating Engine Block Heater	unit	Existing	961.02	15	\$220.78	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	5,335.84	10	\$604.92	0%	0%	\$17.32	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	310.67	1	\$54.66	0%	0%	\$167.96	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	120.43	2	\$14.74	0%	0%	\$62.17	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$46.16	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	688.55	15	\$88.94	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	Existing	372.37	10	\$3,723.73	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$0.59	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$2.73	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$3.30	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$10.36	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$2.11	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$10.20	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$0.20	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	Existing	73.53	10	\$17.30	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	76.16	10	\$1.30	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$9.41	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	Existing	61.18	10	\$31.57	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	49.00	10	\$10.40	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	Existing	49.00	10	\$4.26	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	Existing	131.30	10	\$12.91	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	Existing	0.55	5	\$0.07	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1.17	1	\$0.05	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	Existing	4.88	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	Existing	21.07	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Ventilation	Transformer - High Efficiency	employee	Existing	0.73	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	3.65	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.85	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Motors	Transformer - High Efficiency	employee	Existing	96.10	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	Existing	4.90	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	3.27	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	Existing	14.09	3	\$96.71	3%	11%	\$88.64	0.59	0.60	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	Existing	60.87	3	\$96.71	3%	11%	\$88.64	2.39	2.40	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	Existing	2.10	3	\$96.71	3%	11%	\$88.64	0.49	0.50	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	Existing	10.54	3	\$96.71	3%	11%	\$88.64	2.16	2.31	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	2.46	3	\$96.71	3%	11%	\$88.64	0.55	0.57	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	Existing	277.63	3	\$96.71	3%	11%	\$88.64	66.85	66.85	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	Existing	14.16	3	\$96.71	3%	11%	\$88.64	3.41	3.41	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	Existing	9.45	3	\$96.71	3%	11%	\$88.64	3.92	3.05	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	Existing	12.17	3	\$167.55	0%	0%	\$165.28	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	Existing	2.84	3	\$167.55	0%	0%	\$165.28	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	Existing	320.34	3	\$167.55	0%	0%	\$165.28	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Process	Commissioning	employee	Existing	16.33	3	\$167.55	0%	0%	\$165.28	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	Existing	10.90	3	\$167.55	0%	0%	\$165.28	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	Existing	12.17	3	\$106.36	5%	39%	\$104.92	5.00	5.33	IND_RCX-Motors-AEG-1

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Water	Exterior Lighting	Retrocommissioning	employee	Existing	2.84	3	\$106.36	5%	39%	\$104.92	1.26	1.31	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	Existing	320.34	3	\$106.36	5%	39%	\$104.92	154.27	154.27	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	Existing	16.33	3	\$106.36	5%	39%	\$104.92	7.87	7.87	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	Existing	10.90	3	\$106.36	5%	39%	\$104.92	9.05	7.03	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	163.55	12	\$89.23	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	15%	20%	\$40.24	40.29	40.29	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	2,723.82	11	\$2,122.44	15%	20%	\$114.76	197.52	197.52	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Water	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	0.21	0.21	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	0.76	0.76	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.16	0.16	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.66	0.08	0.08	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.66	0.03	0.03	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.66	0.01	0.01	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.51	0.51	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.11	0.11	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.03	0.03	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.07	0.07	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.01	0.01	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.03	0.03	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.28	0.28	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.14	0.14	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.04	0.04	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.16	0.16	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	New	0.05	5	\$0.40	18%	30%	\$1,796.07	0.06	0.06	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.05	0.05	VENT_DCV-Ventilation-7PLN-v5-5
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.54	0.54	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	3.71	3.71	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.15	0.15	STAT_WIFI-AII-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	0.53	0.53	STAT_WIFI-AII-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.11	0.11	STAT_WIFI-AII-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.08	15	\$0.36	22%	41%	\$536.37	6.01	6.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.12	15	\$0.60	22%	41%	\$632.15	8.41	8.44	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.69	0.70	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.86	0.87	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.43	0.44	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	0.34	0.35	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.91	0.36	0.37	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	New	400.08	20	\$137.55	15%	20%	\$38.23	1.81	1.81	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$14.50	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$10.15	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	New	1,210.59	10	\$177.50	9%	38%	\$54.93	118.13	118.13	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	New	907.94	12	\$270.51	9%	38%	(\$23.24)	128.25	128.25	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	New	907.94	10	\$281.95	9%	38%	\$47.44	120.03	120.03	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$2.13	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$3.53	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$17.81	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	30.89	10	\$2.32	17%	50%	\$38.58	3.52	3.52	CMPAIR_EQPT-Motors-7PLN-v5-2

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Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	0.40	0.40	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.02	0.02	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	35.30	10	\$3.82	9%	15%	\$16.53	0.98	0.98	E3T
Water	Motors	Compressed Air - System Controls	employee	New	7.06	10	\$1.66	9%	38%	\$4.42	0.93	0.93	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	New	17.65	10	\$1.67	18%	75%	\$41.54	3.44	3.44	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	13.24	15	\$10.18	26%	45%	\$96.52	1.31	1.31	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.44	10	\$0.16	17%	50%	\$54.13	0.05	0.05	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	2.65	10	\$0.51	17%	50%	\$29.38	0.30	0.30	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	1.09	1.09	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	2.65	15	\$1.40	17%	50%	\$66.36	0.38	0.38	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	New	24.71	6	\$3.82	26%	45%	\$32.76	1.61	1.61	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	New	49.18	10	\$17.31	25%	45%	\$53.75	4.56	4.56	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	14.42	10	\$6.09	10%	50%	\$64.50	6.65	6.65	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	8.01	10	\$2.16	6%	25%	\$41.21	1.76	1.76	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	120.13	12	\$26.72	16%	25%	\$31.23	13.99	13.99	2015-mdu-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	32.03	10	\$8.04	16%	36%	\$38.33	5.21	5.21	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	New	656.80	10	\$81.68	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Circulating Engine Block Heater	unit	New	961.02	15	\$220.78	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	5,335.84	10	\$604.92	0%	0%	\$17.32	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	310.67	1	\$54.66	0%	0%	\$167.96	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	120.43	2	\$14.74	0%	0%	\$62.17	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$46.16	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	688.55	15	\$88.94	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	New	372.37	10	\$3,723.73	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$0.59	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$2.73	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$3.30	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$10.36	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$2.11	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$10.20	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$0.20	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	New	73.53	10	\$17.30	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	76.16	10	\$1.30	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$9.41	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	New	61.18	10	\$31.57	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	New	49.00	10	\$10.40	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	New	49.00	10	\$4.26	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	New	131.30	10	\$12.91	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	New	0.55	5	\$0.07	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1.17	1	\$0.05	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	New	5.17	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	New	21.16	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Ventilation	Transformer - High Efficiency	employee	New	0.72	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	New	3.10	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	0.80	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Motors	Transformer - High Efficiency	employee	New	96.10	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	New	4.90	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	New	3.21	10	\$15.78	15%	15%	\$17.71	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	New	14.94	3	\$96.71	3%	11%	\$88.62	0.03	0.03	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	New	61.14	3	\$96.71	3%	11%	\$88.62	0.10	0.10	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	New	2.09	3	\$96.71	3%	11%	\$88.62	0.02	0.02	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	New	8.95	3	\$96.71	3%	11%	\$88.62	0.08	0.08	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	New	2.30	3	\$96.71	3%	11%	\$88.62	0.02	0.02	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	New	277.63	3	\$96.71	3%	11%	\$88.62	2.64	2.64	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	New	14.16	3	\$96.71	3%	11%	\$88.62	0.13	0.13	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	New	9.28	3	\$96.71	3%	11%	\$88.62	0.14	0.10	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	New	10.32	3	\$167.55	5%	39%	\$166.08	0.37	0.37	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	New	2.65	3	\$167.55	5%	39%	\$166.08	0.10	0.10	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	New	320.34	3	\$167.55	5%	39%	\$166.08	15.77	15.77	IND_SEM-HVAC-AEG-1

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Water	Process	Commissioning	employee	New	16.33	3	\$167.55	5%	39%	\$166.08	0.20	0.20	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	New	10.71	3	\$167.55	5%	39%	\$166.08	0.40	0.33	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	New	10.32	3	\$106.36	0%	0%	\$105.43	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Exterior Lighting	Retrocommissioning	employee	New	2.65	3	\$106.36	0%	0%	\$105.43	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	New	320.34	3	\$106.36	0%	0%	\$105.43	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	New	16.33	3	\$106.36	0%	0%	\$105.43	0.00	0.00	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	New	10.71	3	\$106.36	0%	0%	\$105.43	0.00	0.00	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	New	163.55	12	\$89.23	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	15%	20%	\$40.24	13.77	13.77	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	2,723.82	11	\$2,122.44	15%	20%	\$114.76	65.68	65.68	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Water	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.02	0.02	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	0.08	0.08	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.02	0.02	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.76	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.76	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.76	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	0.05	0.05	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.00	0.00	Building Energy Simulation Tool

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Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.01	0.01	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.55	0.05	0.06	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.16	0.03	0.03	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.02	0.02	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.03	5	\$0.40	18%	30%	\$3,250.45	0.02	0.02	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.01	0.01	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	0.10	0.10	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	0.73	0.74	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.01	0.01	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	0.04	0.04	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	0.17	0.17	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	0.03	0.04	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.06	15	\$0.36	7%	33%	\$821.47	0.33	0.35	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.08	15	\$0.60	7%	33%	\$968.16	0.46	0.49	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.23	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	0.06	0.07	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	0.07	0.07	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.39	0.08	0.08	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.67	0.12	0.12	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,401.40	0.08	0.08	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	144.87	20	\$49.81	15%	20%	\$38.23	0.14	0.14	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	5.33	15	\$5.34	20%	50%	\$125.71	0.23	0.23	RFG_FHPC-Refrigeration-RTF-v1.3-23
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	8.52	15	\$3.74	20%	50%	\$54.99	0.37	0.37	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	60.12	10	\$8.82	9%	38%	\$54.93	2.49	2.49	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	45.09	12	\$13.43	9%	38%	(\$23.24)	1.82	1.82	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	45.09	10	\$14.00	9%	38%	\$47.44	1.82	1.82	PUMP_VSD-Motors-UN-v1.0-3

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Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	15.11	10	\$1.52	9%	38%	\$47.89	0.62	0.62	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	17.86	10	\$2.51	9%	38%	\$18.25	0.72	0.72	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	27.47	10	\$12.67	9%	38%	\$70.46	1.11	1.11	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	111.49	10	\$8.37	17%	50%	\$38.58	5.38	5.38	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	0.39	0.39	CMPAIR_HTCMPDESDRY-Motors-MEMD-v.2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.03	0.03	CMPAIR_RFRGDRIY-Motors-MEMD-v.2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	127.41	10	\$13.78	9%	15%	\$16.53	1.08	1.08	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	25.48	10	\$5.98	9%	38%	\$4.42	1.03	1.03	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	63.71	10	\$6.02	18%	75%	\$41.54	5.27	5.27	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	47.78	15	\$36.76	26%	45%	\$96.52	1.28	1.28	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.59	10	\$0.56	17%	50%	\$54.13	0.08	0.08	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	9.56	10	\$1.84	17%	50%	\$29.38	0.46	0.46	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	1.30	1.30	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	9.56	15	\$5.05	17%	50%	\$66.36	0.46	0.46	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	89.19	6	\$13.80	26%	45%	\$32.76	2.39	2.39	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	54.06	10	\$19.02	25%	45%	\$53.75	1.53	1.53	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	1.95	10	\$0.82	10%	50%	\$64.50	0.57	0.57	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.08	10	\$0.29	6%	25%	\$41.21	0.15	0.15	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	16.25	12	\$3.61	16%	25%	\$31.23	1.12	1.12	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	4.33	10	\$1.09	16%	36%	\$38.33	0.64	0.64	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	237.83	10	\$29.58	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	347.99	15	\$79.95	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	331.25	10	\$604.92	0%	0%	\$278.95	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	112.50	1	\$54.66	0%	0%	\$463.84	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	43.61	2	\$14.74	0%	0%	\$171.70	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	35.52	15	\$16.99	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	10.36	15	\$1.34	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	92.92	15	\$12.00	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	18.49	10	\$184.94	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	145.42	15	\$1.11	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	10.53	15	\$1.01	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	6.39	15	\$1.21	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	6.39	15	\$3.81	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	18.18	15	\$3.98	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	36.36	15	\$19.20	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	36.36	15	\$0.39	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	80.83	10	\$19.01	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	83.72	10	\$1.42	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	56.97	10	\$6.17	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	24.53	10	\$12.66	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	19.65	10	\$4.17	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	19.65	10	\$1.71	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	144.34	10	\$14.19	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.22	5	\$0.03	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1.29	1	\$0.05	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	1.67	10	\$4.33	15%	15%	\$17.70	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	7.20	10	\$4.33	15%	15%	\$17.70	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.25	10	\$4.33	15%	15%	\$17.70	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.85	10	\$4.33	15%	15%	\$17.70	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.20	10	\$4.33	15%	15%	\$17.70	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	16.25	10	\$4.33	15%	15%	\$17.70	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	9.82	10	\$4.33	15%	15%	\$17.70	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.95	10	\$4.33	15%	15%	\$17.70	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	4.81	3	\$26.54	3%	11%	\$88.57	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	20.80	3	\$26.54	3%	11%	\$88.57	0.01	0.01	IND_SEM-HVAC-AEG-1
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	0.72	3	\$26.54	3%	11%	\$88.57	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	2.46	3	\$26.54	3%	11%	\$88.57	0.01	0.01	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.57	3	\$26.54	3%	11%	\$88.57	0.00	0.00	IND_SEM-Lighting-AEG-1

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Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	46.93	3	\$26.54	3%	11%	\$88.57	0.13	0.13	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	28.38	3	\$26.54	3%	11%	\$88.57	0.08	0.08	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	2.74	3	\$26.54	3%	11%	\$88.57	0.01	0.01	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	2.84	3	\$43.06	0%	0%	\$164.35	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	0.66	3	\$43.06	0%	0%	\$164.35	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	Existing	54.15	3	\$43.06	0%	0%	\$164.35	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	Existing	32.74	3	\$43.06	0%	0%	\$164.35	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	3.16	3	\$43.06	0%	0%	\$164.35	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	2.84	3	\$27.34	5%	39%	\$104.33	0.11	0.12	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	0.66	3	\$27.34	5%	39%	\$104.33	0.03	0.03	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	54.15	3	\$27.34	5%	39%	\$104.33	2.53	2.53	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	Existing	32.74	3	\$27.34	5%	39%	\$104.33	1.53	1.53	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	3.16	3	\$27.34	5%	39%	\$104.33	0.25	0.20	IND_RCX-Process-AEG-1
Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	8.12	12	\$4.43	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	135.28	11	\$105.41	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.89	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.89	0.03	0.03	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.89	0.01	0.01	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.06	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.06	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.06	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.02	0.02	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.00	0.00	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.00	0.00	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.01	0.01	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.01	0.01	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	0.03	5	\$0.40	18%	30%	\$3,001.20	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.02	0.02	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	0.13	0.13	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.18	0.00	0.00	STAT_WIFI-All-7PLN-v2-1

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Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.18	0.02	0.02	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.18	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.05	15	\$0.36	22%	41%	\$896.65	0.14	0.14	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.07	15	\$0.60	22%	41%	\$1,056.77	0.19	0.19	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.02	0.02	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.02	0.02	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.01	0.01	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.02	0.01	0.01	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,581.00	0.01	0.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	144.87	20	\$49.81	15%	20%	\$38.23	0.05	0.05	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	5.33	15	\$5.34	20%	50%	\$125.71	0.07	0.07	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	8.52	15	\$3.74	20%	50%	\$54.99	0.11	0.11	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	60.12	10	\$8.82	9%	38%	\$54.93	0.57	0.57	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	45.09	12	\$13.43	9%	38%	(\$23.24)	0.62	0.62	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	45.09	10	\$14.00	9%	38%	\$47.44	0.58	0.58	PUMP_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	15.11	10	\$1.52	9%	38%	\$47.89	0.14	0.14	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	17.86	10	\$2.51	9%	38%	\$18.25	0.23	0.23	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	27.47	10	\$12.67	9%	38%	\$70.46	0.35	0.35	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	111.49	10	\$8.37	17%	50%	\$38.58	1.24	1.24	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	0.14	0.14	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	127.41	10	\$13.78	9%	15%	\$16.53	0.35	0.35	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	25.48	10	\$5.98	9%	38%	\$4.42	0.33	0.33	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	63.71	10	\$6.02	18%	75%	\$41.54	1.21	1.21	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	47.78	15	\$36.76	26%	45%	\$96.52	0.46	0.46	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.59	10	\$0.56	17%	50%	\$54.13	0.02	0.02	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	9.56	10	\$1.84	17%	50%	\$29.38	0.11	0.11	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	0.38	0.38	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	9.56	15	\$5.05	17%	50%	\$66.36	0.13	0.13	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	New	89.19	6	\$13.80	26%	45%	\$32.76	0.57	0.57	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	54.06	10	\$19.02	25%	45%	\$53.75	0.49	0.49	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	1.95	10	\$0.82	10%	50%	\$64.50	0.11	0.11	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.08	10	\$0.29	6%	25%	\$41.21	0.03	0.03	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	16.25	12	\$3.61	16%	25%	\$31.23	0.24	0.24	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	4.33	10	\$1.09	16%	36%	\$38.33	0.09	0.09	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	237.83	10	\$29.58	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	347.99	15	\$79.95	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	331.25	10	\$604.92	0%	0%	\$278.95	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	112.50	1	\$54.66	0%	0%	\$463.84	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	43.61	2	\$14.74	0%	0%	\$171.70	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	35.52	15	\$16.99	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	10.36	15	\$1.34	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	92.92	15	\$12.00	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	New	18.49	10	\$184.94	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	145.42	15	\$1.11	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	10.53	15	\$1.01	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	6.39	15	\$1.21	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	6.39	15	\$3.81	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	18.18	15	\$3.98	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	36.36	15	\$19.20	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	36.36	15	\$0.39	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	80.83	10	\$19.01	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	83.72	10	\$1.42	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	56.97	10	\$6.17	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	24.53	10	\$12.66	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	19.65	10	\$4.17	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	19.65	10	\$1.71	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	144.34	10	\$14.19	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	0.22	5	\$0.03	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1.29	1	\$0.05	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	1.77	10	\$4.33	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	7.23	10	\$4.33	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.25	10	\$4.33	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	0.72	10	\$4.33	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.19	10	\$4.33	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	16.25	10	\$4.33	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	9.82	10	\$4.33	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	0.93	10	\$4.33	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	5.12	3	\$26.54	3%	11%	\$88.43	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	New	20.89	3	\$26.54	3%	11%	\$88.43	0.00	0.00	IND_SEM-HVAC-AEG-1

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Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	0.71	3	\$26.54	3%	11%	\$88.43	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	2.09	3	\$26.54	3%	11%	\$88.43	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.54	3	\$26.54	3%	11%	\$88.43	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Motors	Strategic Energy Management	employee	New	46.93	3	\$26.54	3%	11%	\$88.43	0.01	0.01	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	New	28.38	3	\$26.54	3%	11%	\$88.43	0.00	0.00	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	2.69	3	\$26.54	3%	11%	\$88.43	0.00	0.00	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	New	2.41	3	\$43.06	5%	39%	\$165.14	0.01	0.01	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	0.62	3	\$43.06	5%	39%	\$165.14	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	New	54.15	3	\$43.06	5%	39%	\$165.14	0.32	0.32	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	New	32.74	3	\$43.06	5%	39%	\$165.14	0.20	0.20	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	New	3.10	3	\$43.06	5%	39%	\$165.14	0.01	0.01	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	2.41	3	\$27.34	0%	0%	\$104.84	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	0.62	3	\$27.34	0%	0%	\$104.84	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	New	54.15	3	\$27.34	0%	0%	\$104.84	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	New	32.74	3	\$27.34	0%	0%	\$104.84	0.00	0.00	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	3.10	3	\$27.34	0%	0%	\$104.84	0.00	0.00	IND_RCX-Process-AEG-1

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Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	8.12	12	\$4.43	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	135.28	11	\$105.41	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.44	0.45	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	1.74	1.75	Building Energy Simulation Tool

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Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.36	0.36	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.79	0.17	0.18	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.79	0.07	0.07	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.79	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	1.16	1.16	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.24	0.24	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.06	0.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.16	0.16	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.03	0.03	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.14	0.14	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.57	1.18	1.21	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	0.57	0.59	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.10	0.11	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.47	0.48	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.02	5	\$0.40	18%	30%	\$5,282.05	0.52	0.54	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.11	0.12	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	2.11	2.17	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	16.05	16.09	HVLS-Heating-AEG-1
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.23	0.24	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	0.94	0.96	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	3.71	3.71	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	0.76	0.77	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.04	15	\$0.36	7%	33%	\$1,335.34	4.69	4.99	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.05	15	\$0.60	7%	33%	\$1,573.80	6.57	6.99	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.02	0.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	0.91	0.94	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	0.94	0.96	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.41	1.13	1.19	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	1.65	1.74	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.22	1.13	1.19	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	241.58	20	\$83.06	15%	20%	\$38.23	1.93	1.93	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	4.12	15	\$4.13	20%	50%	\$125.71	1.45	1.45	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	6.60	15	\$2.89	20%	50%	\$54.99	2.32	2.32	AEG Research - prior study

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Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	3.14	10	\$0.46	9%	38%	\$54.93	1.06	1.06	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	2.35	12	\$0.70	9%	38%	(\$23.24)	0.77	0.77	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	2.35	10	\$0.73	9%	38%	\$47.44	0.77	0.77	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	2.76	10	\$0.28	9%	38%	\$47.89	0.93	0.93	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	3.26	10	\$0.46	9%	38%	\$18.25	1.07	1.07	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	5.02	10	\$2.31	9%	38%	\$70.46	1.65	1.65	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	15.88	10	\$1.19	17%	50%	\$38.58	6.26	6.26	CMPAIR_EQPT-Motors-7PLN-v5-2
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	0.46	0.46	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.03	0.03	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	18.15	10	\$1.96	9%	15%	\$16.53	1.26	1.26	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	3.63	10	\$0.85	9%	38%	\$4.42	1.19	1.19	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	9.08	10	\$0.86	18%	75%	\$41.54	6.13	6.13	CMPAIR_LEAK-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	6.81	15	\$5.24	26%	45%	\$96.52	1.49	1.49	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.23	10	\$0.08	17%	50%	\$54.13	0.09	0.09	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	1.36	10	\$0.26	17%	50%	\$29.38	0.54	0.54	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	1.52	1.52	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	1.36	15	\$0.72	17%	50%	\$66.36	0.54	0.54	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	12.71	6	\$1.97	26%	45%	\$32.76	2.79	2.79	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	26.57	10	\$9.35	25%	45%	\$53.75	6.13	6.13	MATHAND_VSD-Material Handling-7PLN-v5-2
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.51	10	\$0.22	10%	50%	\$64.50	0.98	0.98	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.29	10	\$0.08	6%	25%	\$41.21	0.26	0.26	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	4.28	12	\$0.95	16%	25%	\$31.23	1.93	1.93	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	1.14	10	\$0.29	16%	36%	\$38.33	1.11	1.11	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	396.59	10	\$49.32	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	580.29	15	\$133.31	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	17.27	10	\$604.92	0%	0%	\$5,349.01	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	187.59	1	\$54.66	0%	0%	\$278.16	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	72.72	2	\$14.74	0%	0%	\$102.97	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	27.49	15	\$13.15	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	22.33	15	\$2.90	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	6.26	15	\$0.81	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	0.96	10	\$9.64	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	8.26	15	\$0.06	15%	75%	\$0.95	5.72	5.72	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	8.15	15	\$0.78	15%	75%	\$11.99	5.64	5.64	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	4.95	15	\$0.94	15%	75%	\$23.83	3.42	3.42	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	4.95	15	\$2.95	15%	75%	(\$63.03)	3.52	3.52	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.03	15	\$0.23	15%	75%	\$27.48	0.73	0.73	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	2.07	15	\$1.09	15%	75%	(\$84.38)	1.47	1.47	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	2.07	15	\$0.02	15%	75%	(\$14.46)	1.47	1.47	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	39.73	10	\$9.34	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	41.14	10	\$0.70	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	53.27	10	\$5.77	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	13.22	10	\$6.82	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	10.59	10	\$2.25	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	10.59	10	\$0.92	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	70.94	10	\$6.97	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.12	5	\$0.02	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.63	1	\$0.03	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1

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Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	4.44	10	\$4.24	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	19.19	10	\$4.24	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.66	10	\$4.24	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	1.47	10	\$4.24	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.34	10	\$4.24	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	3.42	10	\$4.24	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	5.29	10	\$4.24	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	1.58	10	\$4.24	15%	15%	\$17.67	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	12.83	3	\$25.98	3%	11%	\$88.42	0.43	0.43	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	55.43	3	\$25.98	3%	11%	\$88.42	1.73	1.74	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	1.91	3	\$25.98	3%	11%	\$88.42	0.35	0.36	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	4.25	3	\$25.98	3%	11%	\$88.42	0.69	0.74	IND_SEM-Lighting-AEG-1

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Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.99	3	\$25.98	3%	11%	\$88.42	0.18	0.18	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	9.88	3	\$25.98	3%	11%	\$88.42	1.89	1.89	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	15.29	3	\$25.98	3%	11%	\$88.42	2.93	2.93	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	4.56	3	\$25.98	3%	11%	\$88.42	1.51	1.17	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	4.90	3	\$16.80	0%	0%	\$145.03	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	1.14	3	\$16.80	0%	0%	\$145.03	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	11.40	3	\$16.80	0%	0%	\$145.03	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	17.65	3	\$16.80	0%	0%	\$145.03	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	5.26	3	\$16.80	0%	0%	\$145.03	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	4.90	3	\$10.67	5%	39%	\$92.07	1.60	1.71	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	1.14	3	\$10.67	5%	39%	\$92.07	0.41	0.42	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	11.40	3	\$10.67	5%	39%	\$92.07	4.37	4.37	IND_RCX-Motors-AEG-1

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Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	17.65	3	\$10.67	5%	39%	\$92.07	6.76	6.76	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	5.26	3	\$10.67	5%	39%	\$92.07	3.48	2.70	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	0.42	12	\$0.23	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	7.05	11	\$5.50	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	0.15	0.15	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	0.55	0.55	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.12	0.12	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.65	0.06	0.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.65	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.65	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.37	0.37	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.08	0.08	Building Energy Simulation Tool

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Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.02	0.02	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.05	0.05	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.01	0.01	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.02	0.02	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.20	0.20	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.10	0.10	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.03	0.03	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.11	0.11	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.02	5	\$0.40	18%	30%	\$4,880.72	0.04	0.04	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.03	0.03	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.39	0.39	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	2.69	2.69	HVLS-Heating-AEG-1

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Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.11	0.11	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	0.39	0.39	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.08	0.08	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.03	15	\$0.36	22%	41%	\$1,457.57	1.93	1.93	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.04	15	\$0.60	22%	41%	\$1,717.85	2.70	2.70	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.22	0.22	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.27	0.28	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.14	0.14	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	0.11	0.11	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.92	0.12	0.12	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	241.58	20	\$83.06	15%	20%	\$38.23	0.69	0.69	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	4.12	15	\$4.13	20%	50%	\$125.71	0.42	0.42	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	6.60	15	\$2.89	20%	50%	\$54.99	0.67	0.67	AEG Research - prior study
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	3.14	10	\$0.46	9%	38%	\$54.93	0.24	0.24	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	2.35	12	\$0.70	9%	38%	(\$23.24)	0.26	0.26	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	2.35	10	\$0.73	9%	38%	\$47.44	0.25	0.25	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	2.76	10	\$0.28	9%	38%	\$47.89	0.21	0.21	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	3.26	10	\$0.46	9%	38%	\$18.25	0.34	0.34	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	5.02	10	\$2.31	9%	38%	\$70.46	0.53	0.53	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	15.88	10	\$1.19	17%	50%	\$38.58	1.44	1.44	CMPAIR_EQPT-Motors-7PLN-v5-2

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Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	0.16	0.16	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.01	0.01	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	18.15	10	\$1.96	9%	15%	\$16.53	0.40	0.40	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	3.63	10	\$0.85	9%	38%	\$4.42	0.38	0.38	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	9.08	10	\$0.86	18%	75%	\$41.54	1.41	1.41	CMPAIR_LEAK-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	6.81	15	\$5.24	26%	45%	\$96.52	0.54	0.54	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.23	10	\$0.08	17%	50%	\$54.13	0.02	0.02	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	1.36	10	\$0.26	17%	50%	\$29.38	0.12	0.12	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	0.45	0.45	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	1.36	15	\$0.72	17%	50%	\$66.36	0.15	0.15	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	12.71	6	\$1.97	26%	45%	\$32.76	0.66	0.66	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	26.57	10	\$9.35	25%	45%	\$53.75	1.96	1.96	MATHAND_VSD-Material Handling-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.51	10	\$0.22	10%	50%	\$64.50	0.19	0.19	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.29	10	\$0.08	6%	25%	\$41.21	0.05	0.05	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	4.28	12	\$0.95	16%	25%	\$31.23	0.40	0.40	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	1.14	10	\$0.29	16%	36%	\$38.33	0.15	0.15	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	396.59	10	\$49.32	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	580.29	15	\$133.31	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	17.27	10	\$604.92	0%	0%	\$5,349.01	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	187.59	1	\$54.66	0%	0%	\$278.16	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	72.72	2	\$14.74	0%	0%	\$102.97	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	27.49	15	\$13.15	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	22.33	15	\$2.90	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	6.26	15	\$0.81	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	0.96	10	\$9.64	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	8.26	15	\$0.06	15%	75%	\$0.95	2.05	2.05	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	8.15	15	\$0.78	15%	75%	\$11.99	2.03	2.03	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	4.95	15	\$0.94	15%	75%	\$23.83	1.23	1.23	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	4.95	15	\$2.95	15%	75%	(\$63.03)	1.01	1.01	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.03	15	\$0.23	15%	75%	\$27.48	0.21	0.21	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	2.07	15	\$1.09	15%	75%	(\$84.38)	0.42	0.42	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	2.07	15	\$0.02	15%	75%	(\$14.46)	0.42	0.42	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	39.73	10	\$9.34	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	41.14	10	\$0.70	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	53.27	10	\$5.77	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	13.22	10	\$6.82	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1

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Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	10.59	10	\$2.25	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	10.59	10	\$0.92	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	70.94	10	\$6.97	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.12	5	\$0.02	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.63	1	\$0.03	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	4.71	10	\$4.24	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	19.27	10	\$4.24	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.66	10	\$4.24	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	1.25	10	\$4.24	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.32	10	\$4.24	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	3.42	10	\$4.24	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	5.29	10	\$4.24	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	1.55	10	\$4.24	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	13.61	3	\$25.98	3%	11%	\$87.75	0.02	0.02	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	55.67	3	\$25.98	3%	11%	\$87.75	0.07	0.07	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	1.90	3	\$25.98	3%	11%	\$87.75	0.01	0.01	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	3.60	3	\$25.98	3%	11%	\$87.75	0.03	0.03	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.93	3	\$25.98	3%	11%	\$87.75	0.01	0.01	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	9.88	3	\$25.98	3%	11%	\$87.75	0.07	0.07	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	15.29	3	\$25.98	3%	11%	\$87.75	0.12	0.12	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	4.48	3	\$25.98	3%	11%	\$87.75	0.06	0.04	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	4.16	3	\$16.80	5%	39%	\$147.76	0.12	0.12	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	1.07	3	\$16.80	5%	39%	\$147.76	0.03	0.03	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	New	11.40	3	\$16.80	5%	39%	\$147.76	0.45	0.45	IND_SEM-HVAC-AEG-1

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Electronic Equipment Mfg	Process	Commissioning	employee	New	17.65	3	\$16.80	5%	39%	\$147.76	0.86	0.86	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	5.17	3	\$16.80	5%	39%	\$147.76	0.15	0.13	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	4.16	3	\$10.67	0%	0%	\$93.80	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	1.07	3	\$10.67	0%	0%	\$93.80	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	11.40	3	\$10.67	0%	0%	\$93.80	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	17.65	3	\$10.67	0%	0%	\$93.80	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	5.17	3	\$10.67	0%	0%	\$93.80	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	0.42	12	\$0.23	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	7.05	11	\$5.50	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

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Electronic Equipment Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	3.61	3.67	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	14.16	14.18	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	2.91	2.95	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.79	1.41	1.43	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.79	0.60	0.60	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.79	0.12	0.12	Building Energy Simulation Tool

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Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.03	0.03	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	9.44	9.45	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	1.94	1.97	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.45	0.46	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	1.33	1.33	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.27	0.28	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	1.15	1.18	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.57	9.59	9.81	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	4.66	4.76	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.85	0.87	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	3.80	3.92	AEG-BEST
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.05	5	\$0.40	18%	30%	\$1,935.13	4.24	4.37	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.93	0.95	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	17.15	17.65	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	130.39	130.72	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	1.91	1.98	RTU_MNT-Cooling-PGE-R2-1

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Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	7.67	7.82	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	30.12	30.17	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	6.18	6.27	STAT_WIFI-AII-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.36	7%	33%	\$489.22	56.89	60.53	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.60	7%	33%	\$576.59	79.65	84.74	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.30	0.33	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	11.07	11.36	CLTG_DLMpA-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	11.34	11.63	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.41	13.75	14.49	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	20.06	21.12	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.26	13.71	14.44	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,688.00	20	\$924.15	15%	20%	\$38.23	15.95	15.95	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	7.27	15	\$7.29	20%	50%	\$125.71	3.80	3.80	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	11.64	15	\$5.10	20%	50%	\$54.99	6.08	6.08	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	74.70	10	\$10.95	9%	38%	\$54.93	37.40	37.40	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	56.02	12	\$16.69	9%	38%	(\$23.24)	27.32	27.32	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	56.02	10	\$17.40	9%	38%	\$47.44	27.32	27.32	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	95.62	10	\$9.61	9%	38%	\$47.89	47.87	47.87	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	113.00	10	\$15.91	9%	38%	\$18.25	55.10	55.10	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	173.85	10	\$80.18	9%	38%	\$70.46	84.77	84.77	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	259.07	10	\$19.45	17%	50%	\$38.58	151.32	151.32	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	11.09	11.09	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.75	0.75	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	296.08	10	\$32.03	9%	15%	\$16.53	30.39	30.39	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	59.22	10	\$13.91	9%	38%	\$4.42	28.87	28.87	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	148.04	10	\$13.98	18%	75%	\$41.54	148.23	148.23	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	111.03	15	\$85.41	26%	45%	\$96.52	36.09	36.09	CMPAIR_VSD-Motors-UN-v1.0-3

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Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	3.70	10	\$1.31	17%	50%	\$54.13	2.16	2.16	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	22.21	10	\$4.27	17%	50%	\$29.38	12.97	12.97	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	36.71	36.71	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	22.21	15	\$11.74	17%	50%	\$66.36	12.97	12.97	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	Existing	207.26	6	\$32.07	26%	45%	\$32.76	67.37	67.37	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	224.43	10	\$78.97	25%	45%	\$53.75	76.79	76.79	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	7.16	10	\$3.02	10%	50%	\$64.50	20.20	20.20	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.98	10	\$1.07	6%	25%	\$41.21	5.33	5.33	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	59.65	12	\$13.27	16%	25%	\$31.23	39.98	39.98	2015-mdi-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	15.91	10	\$3.99	16%	36%	\$38.33	22.99	22.99	DRV_SYNBELT-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	Existing	4,412.84	10	\$548.81	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	Existing	6,456.78	15	\$1,483.35	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	823.12	10	\$604.92	0%	0%	\$112.26	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	2,087.30	1	\$54.66	0%	0%	\$25.00	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	809.16	2	\$14.74	0%	0%	\$9.25	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	48.49	15	\$23.19	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	70.42	15	\$9.13	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	84.56	15	\$10.92	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	Existing	22.98	10	\$229.77	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	26.28	15	\$0.20	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	14.38	15	\$1.37	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	8.73	15	\$1.66	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	8.73	15	\$5.21	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	3.29	15	\$0.72	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	6.57	15	\$3.47	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	6.57	15	\$0.07	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	335.55	10	\$78.93	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	347.53	10	\$5.91	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1

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Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	222.80	10	\$24.13	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	36.54	10	\$18.86	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	29.27	10	\$6.21	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	29.27	10	\$2.55	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	599.19	10	\$58.90	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	0.33	5	\$0.04	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.35	1	\$0.22	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	24.32	10	\$25.52	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	105.08	10	\$25.52	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	3.63	10	\$25.52	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	12.01	10	\$25.52	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.80	10	\$25.52	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	47.72	10	\$25.52	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	14.64	10	\$25.52	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	8.79	10	\$25.52	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	70.26	3	\$156.47	3%	11%	\$88.70	0.41	0.42	IND_SEM-HVAC-AEG-1

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Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	303.57	3	\$156.47	3%	11%	\$88.70	1.66	1.66	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	10.48	3	\$156.47	3%	11%	\$88.70	0.34	0.34	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	34.70	3	\$156.47	3%	11%	\$88.70	0.99	1.06	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	8.09	3	\$156.47	3%	11%	\$88.70	0.25	0.26	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	137.86	3	\$156.47	3%	11%	\$88.70	4.61	4.61	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	42.28	3	\$156.47	3%	11%	\$88.70	1.41	1.41	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	25.38	3	\$156.47	3%	11%	\$88.70	1.46	1.14	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	40.04	3	\$123.28	0%	0%	\$151.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	9.34	3	\$123.28	0%	0%	\$151.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	Existing	159.07	3	\$123.28	0%	0%	\$151.64	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	Existing	48.78	3	\$123.28	0%	0%	\$151.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	29.29	3	\$123.28	0%	0%	\$151.64	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	40.04	3	\$78.26	5%	39%	\$96.26	19.39	20.70	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	9.34	3	\$78.26	5%	39%	\$96.26	4.91	5.08	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	159.07	3	\$78.26	5%	39%	\$96.26	90.37	90.37	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	Existing	48.78	3	\$78.26	5%	39%	\$96.26	27.72	27.72	IND_RCX-Process-AEG-1

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Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	29.29	3	\$78.26	5%	39%	\$96.26	28.70	22.30	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	10.09	12	\$5.51	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	168.07	11	\$130.97	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	1.25	1.25	Building Energy Simulation Tool

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Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	4.47	4.47	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.93	0.93	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.67	0.49	0.49	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.67	0.19	0.19	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.67	0.04	0.04	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.01	0.01	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	2.98	2.98	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.62	0.62	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.15	0.15	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.41	0.41	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.09	0.09	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.16	0.16	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	1.65	1.65	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.80	0.80	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.26	0.26	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.92	0.92	AEG-BEST

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Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.05	5	\$0.40	18%	30%	\$1,788.16	0.36	0.36	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.27	0.27	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	3.15	3.15	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	21.82	21.82	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.15	0.15	RTU_MNT-Cooling-PGE-R2-1
Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.87	0.87	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	3.13	3.13	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.65	0.65	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.09	15	\$0.36	22%	41%	\$534.00	23.33	23.41	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.12	15	\$0.60	22%	41%	\$629.36	32.66	32.77	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.04	0.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	2.69	2.72	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	3.33	3.36	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	1.69	1.72	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	1.33	1.36	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.91	1.40	1.43	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,688.00	20	\$924.15	15%	20%	\$38.23	5.73	5.73	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	7.27	15	\$7.29	20%	50%	\$125.71	1.09	1.09	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	11.64	15	\$5.10	20%	50%	\$54.99	1.74	1.74	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	74.70	10	\$10.95	9%	38%	\$54.93	8.60	8.60	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	56.02	12	\$16.69	9%	38%	(\$23.24)	9.34	9.34	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	56.02	10	\$17.40	9%	38%	\$47.44	8.74	8.74	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	95.62	10	\$9.61	9%	38%	\$47.89	11.01	11.01	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	113.00	10	\$15.91	9%	38%	\$18.25	17.62	17.62	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	173.85	10	\$80.18	9%	38%	\$70.46	27.11	27.11	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	259.07	10	\$19.45	17%	50%	\$38.58	34.79	34.79	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	3.99	3.99	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1

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Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.17	0.17	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	296.08	10	\$32.03	9%	15%	\$16.53	9.72	9.72	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	59.22	10	\$13.91	9%	38%	\$4.42	9.23	9.23	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	148.04	10	\$13.98	18%	75%	\$41.54	34.08	34.08	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	111.03	15	\$85.41	26%	45%	\$96.52	12.96	12.96	CMPAIR_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	3.70	10	\$1.31	17%	50%	\$54.13	0.50	0.50	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	22.21	10	\$4.27	17%	50%	\$29.38	2.98	2.98	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	10.79	10.79	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	22.21	15	\$11.74	17%	50%	\$66.36	3.72	3.72	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	New	207.26	6	\$32.07	26%	45%	\$32.76	15.93	15.93	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	224.43	10	\$78.97	25%	45%	\$53.75	24.56	24.56	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	7.16	10	\$3.02	10%	50%	\$64.50	3.89	3.89	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.98	10	\$1.07	6%	25%	\$41.21	1.03	1.03	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	59.65	12	\$13.27	16%	25%	\$31.23	8.19	8.19	2015-mdu-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	15.91	10	\$3.99	16%	36%	\$38.33	3.05	3.05	DRV_SYNBELT-Motors-7PLN-v5-1

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Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	New	4,412.84	10	\$548.81	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	New	6,456.78	15	\$1,483.35	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	823.12	10	\$604.92	0%	0%	\$112.26	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,087.30	1	\$54.66	0%	0%	\$25.00	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	809.16	2	\$14.74	0%	0%	\$9.25	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	48.49	15	\$23.19	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	70.42	15	\$9.13	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	84.56	15	\$10.92	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	New	22.98	10	\$229.77	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	26.28	15	\$0.20	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	14.38	15	\$1.37	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	8.73	15	\$1.66	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	8.73	15	\$5.21	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	3.29	15	\$0.72	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	6.57	15	\$3.47	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	6.57	15	\$0.07	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	335.55	10	\$78.93	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	347.53	10	\$5.91	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	222.80	10	\$24.13	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	36.54	10	\$18.86	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	29.27	10	\$6.21	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	29.27	10	\$2.55	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	599.19	10	\$58.90	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	0.33	5	\$0.04	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.35	1	\$0.22	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	25.79	10	\$25.52	15%	15%	\$17.63	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	105.54	10	\$25.52	15%	15%	\$17.63	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	3.60	10	\$25.52	15%	15%	\$17.63	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	10.19	10	\$25.52	15%	15%	\$17.63	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	2.62	10	\$25.52	15%	15%	\$17.63	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	47.72	10	\$25.52	15%	15%	\$17.63	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	14.64	10	\$25.52	15%	15%	\$17.63	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	8.63	10	\$25.52	15%	15%	\$17.63	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	74.51	3	\$156.47	3%	11%	\$88.22	0.02	0.02	IND_SEM-HVAC-AEG-1
Industrial Machinery	Heating	Strategic Energy Management	employee	New	304.89	3	\$156.47	3%	11%	\$88.22	0.07	0.07	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	10.41	3	\$156.47	3%	11%	\$88.22	0.01	0.01	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	29.44	3	\$156.47	3%	11%	\$88.22	0.04	0.04	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	7.57	3	\$156.47	3%	11%	\$88.22	0.01	0.01	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	New	137.86	3	\$156.47	3%	11%	\$88.22	0.18	0.18	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	New	42.28	3	\$156.47	3%	11%	\$88.22	0.06	0.06	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	24.95	3	\$156.47	3%	11%	\$88.22	0.05	0.04	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	New	33.97	3	\$123.28	5%	39%	\$154.44	1.44	1.45	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	New	8.74	3	\$123.28	5%	39%	\$154.44	0.37	0.38	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	New	159.07	3	\$123.28	5%	39%	\$154.44	9.24	9.24	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	New	48.78	3	\$123.28	5%	39%	\$154.44	3.54	3.54	IND_SEM-Lighting-AEG-1

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Industrial Machinery	Miscellaneous	Commissioning	employee	New	28.78	3	\$123.28	5%	39%	\$154.44	1.26	1.05	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	33.97	3	\$78.26	0%	0%	\$98.04	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	8.74	3	\$78.26	0%	0%	\$98.04	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	New	159.07	3	\$78.26	0%	0%	\$98.04	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	New	48.78	3	\$78.26	0%	0%	\$98.04	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	28.78	3	\$78.26	0%	0%	\$98.04	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	New	10.09	12	\$5.51	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	168.07	11	\$130.97	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Industrial Machinery	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.38	0.39	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	1.49	1.49	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.31	0.31	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.78	0.15	0.15	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.78	0.06	0.06	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.78	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	0.99	0.99	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.20	0.21	Building Energy Simulation Tool

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Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.05	0.05	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.14	0.14	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.03	0.03	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.12	0.12	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.56	1.01	1.03	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	0.49	0.50	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.09	0.09	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	0.40	0.41	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.05	5	\$0.40	18%	30%	\$2,011.87	0.45	0.46	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.10	0.10	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	1.80	1.86	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	13.71	13.74	HVLS-Heating-AEG-1

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Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.20	0.21	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	0.81	0.82	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	3.17	3.17	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	0.65	0.66	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.36	7%	33%	\$508.58	14.25	15.16	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.60	7%	33%	\$599.40	19.95	21.22	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.07	0.08	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	2.78	2.85	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	2.84	2.91	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.40	3.44	3.63	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	5.02	5.29	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.04	3.43	3.61	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,679.44	20	\$577.40	15%	20%	\$38.23	5.12	5.12	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	6.85	15	\$6.86	20%	50%	\$125.71	0.92	0.92	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	10.95	15	\$4.80	20%	50%	\$54.99	1.47	1.47	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	295.18	10	\$43.28	9%	38%	\$54.93	37.96	37.96	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	221.39	12	\$65.96	9%	38%	(\$23.24)	27.73	27.73	PUMP_SYSOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	221.39	10	\$68.75	9%	38%	\$47.44	27.73	27.73	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	119.63	10	\$12.03	9%	38%	\$47.89	15.39	15.39	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	141.38	10	\$19.90	9%	38%	\$18.25	17.71	17.71	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	217.51	10	\$100.33	9%	38%	\$70.46	27.24	27.24	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	195.88	10	\$14.70	17%	50%	\$38.58	29.39	29.39	CMPAIR_EQPT-Motors-7PLN-v5-2

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Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	2.15	2.15	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.15	0.15	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	223.86	10	\$24.22	9%	15%	\$16.53	5.90	5.90	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	44.77	10	\$10.51	9%	38%	\$4.42	5.61	5.61	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	111.93	10	\$10.57	18%	75%	\$41.54	28.79	28.79	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	83.95	15	\$64.58	26%	45%	\$96.52	7.01	7.01	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.80	10	\$0.99	17%	50%	\$54.13	0.42	0.42	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	16.79	10	\$3.23	17%	50%	\$29.38	2.52	2.52	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	7.13	7.13	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	16.79	15	\$8.88	17%	50%	\$66.36	2.52	2.52	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	Existing	156.70	6	\$24.25	26%	45%	\$32.76	13.09	13.09	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,409.93	10	\$496.14	25%	45%	\$53.75	123.93	123.93	MATHAND_VSD-Material Handling-7PLN-v5-2

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Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	19.38	10	\$8.18	10%	50%	\$64.50	17.54	17.54	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	10.77	10	\$2.90	6%	25%	\$41.21	4.63	4.63	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	161.49	12	\$35.92	16%	25%	\$31.23	34.71	34.71	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	43.06	10	\$10.81	16%	36%	\$38.33	19.96	19.96	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	2,757.11	10	\$342.89	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	4,034.15	15	\$926.79	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,626.34	10	\$604.92	0%	0%	\$56.82	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,304.13	1	\$54.66	0%	0%	\$40.01	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	505.56	2	\$14.74	0%	0%	\$14.81	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	45.64	15	\$21.82	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	93.51	15	\$12.13	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	355.08	15	\$45.87	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	Existing	90.80	10	\$907.98	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	42.44	15	\$0.32	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	13.53	15	\$1.29	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	8.21	15	\$1.56	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	8.21	15	\$4.90	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	5.30	15	\$1.16	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	10.61	15	\$5.60	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	10.61	15	\$0.11	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	2,108.05	10	\$495.85	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,183.33	10	\$37.13	15%	75%	(\$63.05)	575.73	575.73	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	553.60	10	\$59.95	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	59.76	10	\$30.84	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1

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Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	47.86	10	\$10.16	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	47.86	10	\$4.16	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	3,764.37	10	\$370.01	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	0.54	5	\$0.07	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	33.60	1	\$1.41	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	9.97	10	\$30.87	15%	15%	\$17.61	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	43.06	10	\$30.87	15%	15%	\$17.61	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	1.49	10	\$30.87	15%	15%	\$17.61	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	11.72	10	\$30.87	15%	15%	\$17.61	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.73	10	\$30.87	15%	15%	\$17.61	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	161.49	10	\$30.87	15%	15%	\$17.61	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	23.93	10	\$30.87	15%	15%	\$17.61	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	10.98	10	\$30.87	15%	15%	\$17.61	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	28.79	3	\$189.26	3%	11%	\$88.16	0.45	0.46	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	124.38	3	\$189.26	3%	11%	\$88.16	1.83	1.83	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	4.29	3	\$189.26	3%	11%	\$88.16	0.37	0.38	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	33.86	3	\$189.26	3%	11%	\$88.16	2.60	2.77	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	7.90	3	\$189.26	3%	11%	\$88.16	0.66	0.68	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	466.53	3	\$189.26	3%	11%	\$88.16	42.00	42.00	IND_SEM-Motors-AEG-1
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	69.13	3	\$189.26	3%	11%	\$88.16	6.22	6.22	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	31.72	3	\$189.26	3%	11%	\$88.16	4.92	3.83	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	39.07	3	\$317.80	0%	0%	\$160.81	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	9.11	3	\$317.80	0%	0%	\$160.81	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	Existing	538.30	3	\$317.80	0%	0%	\$160.81	0.00	0.00	IND_SEM-HVAC-AEG-1

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Lumber Wood Products	Process	Commissioning	employee	Existing	79.77	3	\$317.80	0%	0%	\$160.81	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	36.60	3	\$317.80	0%	0%	\$160.81	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	39.07	3	\$201.75	10%	35%	\$102.09	3.57	3.81	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	9.11	3	\$201.75	10%	35%	\$102.09	0.90	0.93	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	538.30	3	\$201.75	10%	35%	\$102.09	57.69	57.69	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	Existing	79.77	3	\$201.75	10%	35%	\$102.09	8.55	8.55	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	36.60	3	\$201.75	10%	35%	\$102.09	6.76	5.26	IND_RCX-Process-AEG-1
Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	39.88	12	\$21.76	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	664.17	11	\$517.53	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

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Lumber Wood Products	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	0.13	0.13	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	0.47	0.47	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.10	0.10	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.51	0.05	0.05	Building Energy Simulation Tool

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Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.51	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.51	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.32	0.32	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.07	0.07	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.04	0.04	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.02	0.02	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.18	0.18	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.09	0.09	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.03	0.03	CHLR_VSPMP-Cooling-SCE-17_R0-86

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Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.10	0.10	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.05	5	\$0.40	18%	30%	\$1,858.67	0.04	0.04	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.03	0.03	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.33	0.33	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	2.32	2.32	HVLS-Heating-AEG-1
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.09	0.09	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	0.33	0.33	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.07	0.07	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.08	15	\$0.36	22%	41%	\$555.13	5.85	5.87	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.11	15	\$0.60	22%	41%	\$654.26	8.20	8.22	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.01	0.01	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	0.68	0.68	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	0.83	0.84	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.43	0.43	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	0.34	0.34	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.94	0.35	0.36	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,679.44	20	\$577.40	15%	20%	\$38.23	1.84	1.84	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	6.85	15	\$6.86	20%	50%	\$125.71	0.26	0.26	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	10.95	15	\$4.80	20%	50%	\$54.99	0.42	0.42	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	295.18	10	\$43.28	9%	38%	\$54.93	8.73	8.73	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	221.39	12	\$65.96	9%	38%	(\$23.24)	9.48	9.48	PUMP_SYSOPT-Motors-UN-v1.0-5

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Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	221.39	10	\$68.75	9%	38%	\$47.44	8.87	8.87	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	119.63	10	\$12.03	9%	38%	\$47.89	3.54	3.54	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	141.38	10	\$19.90	9%	38%	\$18.25	5.66	5.66	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	217.51	10	\$100.33	9%	38%	\$70.46	8.71	8.71	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	195.88	10	\$14.70	17%	50%	\$38.58	6.76	6.76	CMPAIR_EQPT-Motors-7PLN-v5-2
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	0.77	0.77	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.03	0.03	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	223.86	10	\$24.22	9%	15%	\$16.53	1.89	1.89	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	44.77	10	\$10.51	9%	38%	\$4.42	1.79	1.79	CMPAIR_SYCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	111.93	10	\$10.57	18%	75%	\$41.54	6.62	6.62	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	83.95	15	\$64.58	26%	45%	\$96.52	2.52	2.52	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.80	10	\$0.99	17%	50%	\$54.13	0.10	0.10	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1

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Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	16.79	10	\$3.23	17%	50%	\$29.38	0.58	0.58	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	2.10	2.10	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	16.79	15	\$8.88	17%	50%	\$66.36	0.72	0.72	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	New	156.70	6	\$24.25	26%	45%	\$32.76	3.09	3.09	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	1,409.93	10	\$496.14	25%	45%	\$53.75	39.64	39.64	MATHAND_VSD-Material Handling-7PLN-v5-2
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	19.38	10	\$8.18	10%	50%	\$64.50	3.40	3.40	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	10.77	10	\$2.90	6%	25%	\$41.21	0.90	0.90	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	161.49	12	\$35.92	16%	25%	\$31.23	7.16	7.16	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	43.06	10	\$10.81	16%	36%	\$38.33	2.67	2.67	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	New	2,757.11	10	\$342.89	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	New	4,034.15	15	\$926.79	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,626.34	10	\$604.92	0%	0%	\$56.82	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1

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Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,304.13	1	\$54.66	0%	0%	\$40.01	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	505.56	2	\$14.74	0%	0%	\$14.81	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	45.64	15	\$21.82	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	93.51	15	\$12.13	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	355.08	15	\$45.87	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	New	90.80	10	\$907.98	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	42.44	15	\$0.32	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	13.53	15	\$1.29	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	8.21	15	\$1.56	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	8.21	15	\$4.90	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	5.30	15	\$1.16	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	10.61	15	\$5.60	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	10.61	15	\$0.11	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	2,108.05	10	\$495.85	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,183.33	10	\$37.13	15%	75%	(\$63.05)	184.14	184.14	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	553.60	10	\$59.95	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	59.76	10	\$30.84	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	47.86	10	\$10.16	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	47.86	10	\$4.16	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	3,764.37	10	\$370.01	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	0.54	5	\$0.07	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	33.60	1	\$1.41	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	10.58	10	\$30.87	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	43.24	10	\$30.87	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	1.48	10	\$30.87	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	9.95	10	\$30.87	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	2.56	10	\$30.87	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	161.49	10	\$30.87	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	23.93	10	\$30.87	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	10.79	10	\$30.87	15%	15%	\$17.65	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	30.55	3	\$189.26	3%	11%	\$88.35	0.02	0.02	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	124.93	3	\$189.26	3%	11%	\$88.35	0.07	0.07	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	4.26	3	\$189.26	3%	11%	\$88.35	0.02	0.02	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	28.73	3	\$189.26	3%	11%	\$88.35	0.10	0.10	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	7.39	3	\$189.26	3%	11%	\$88.35	0.03	0.03	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	New	466.53	3	\$189.26	3%	11%	\$88.35	1.66	1.66	IND_SEM-Motors-AEG-1

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Lumber Wood Products	Process	Strategic Energy Management	employee	New	69.13	3	\$189.26	3%	11%	\$88.35	0.25	0.25	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	31.17	3	\$189.26	3%	11%	\$88.35	0.18	0.13	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	33.15	3	\$317.80	10%	35%	\$162.13	0.27	0.27	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	8.52	3	\$317.80	10%	35%	\$162.13	0.07	0.07	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	New	538.30	3	\$317.80	10%	35%	\$162.13	7.38	7.38	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Process	Commissioning	employee	New	79.77	3	\$317.80	10%	35%	\$162.13	1.09	1.09	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	35.97	3	\$317.80	10%	35%	\$162.13	0.30	0.25	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	33.15	3	\$201.75	0%	0%	\$102.92	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	8.52	3	\$201.75	0%	0%	\$102.92	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	New	538.30	3	\$201.75	0%	0%	\$102.92	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	New	79.77	3	\$201.75	0%	0%	\$102.92	0.00	0.00	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	35.97	3	\$201.75	0%	0%	\$102.92	0.00	0.00	IND_RCX-Process-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	39.88	12	\$21.76	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	664.17	11	\$517.53	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	0.96	0.97	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	3.75	3.76	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	0.77	0.78	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.79	0.37	0.38	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.79	0.16	0.16	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.79	0.03	0.03	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	2.50	2.51	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	0.51	0.52	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	0.12	0.12	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	0.35	0.35	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.07	0.07	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	0.31	0.31	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.57	2.54	2.60	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	1.23	1.26	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	0.22	0.23	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	1.01	1.04	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.06	5	\$0.40	18%	30%	\$1,583.27	1.12	1.16	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	0.25	0.25	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	4.55	4.68	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	34.55	34.64	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	0.51	0.52	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	2.03	2.07	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	7.98	7.99	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	1.64	1.66	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.12	15	\$0.36	7%	33%	\$400.26	22.30	23.72	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.17	15	\$0.60	7%	33%	\$471.74	31.21	33.21	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	0.12	0.13	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	4.34	4.45	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	4.44	4.56	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.41	5.39	5.68	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	7.86	8.28	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.20	5.37	5.66	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,465.82	20	\$503.96	15%	20%	\$38.23	5.11	5.11	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	9.20	15	\$9.21	20%	50%	\$125.71	2.82	2.82	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	14.71	15	\$6.45	20%	50%	\$54.99	4.51	4.51	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	95.38	10	\$13.99	9%	38%	\$54.93	28.04	28.04	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	71.54	12	\$21.31	9%	38%	(\$23.24)	20.48	20.48	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	71.54	10	\$22.21	9%	38%	\$47.44	20.48	20.48	PUMP_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	25.06	10	\$2.52	9%	38%	\$47.89	7.37	7.37	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	29.61	10	\$4.17	9%	38%	\$18.25	8.48	8.48	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	45.55	10	\$21.01	9%	38%	\$70.46	13.04	13.04	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	168.62	10	\$12.66	17%	50%	\$38.58	57.83	57.83	CMPAIR_EQPT-Motors-7PLN-v5-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	4.24	4.24	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	0.29	0.29	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	192.71	10	\$20.85	9%	15%	\$16.53	11.61	11.61	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	38.54	10	\$9.05	9%	38%	\$4.42	11.03	11.03	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	96.35	10	\$9.10	18%	75%	\$41.54	56.65	56.65	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	72.26	15	\$55.59	26%	45%	\$96.52	13.79	13.79	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.41	10	\$0.85	17%	50%	\$54.13	0.83	0.83	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	14.45	10	\$2.78	17%	50%	\$29.38	4.96	4.96	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	14.03	14.03	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	14.45	15	\$7.64	17%	50%	\$66.36	4.96	4.96	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	134.89	6	\$20.87	26%	45%	\$32.76	25.75	25.75	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	435.76	10	\$153.34	25%	45%	\$53.75	87.55	87.55	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	6.43	10	\$2.72	10%	50%	\$64.50	13.32	13.32	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.57	10	\$0.96	6%	25%	\$41.21	3.51	3.51	MTR_GRWND>100HP-Motors-7PLN-v5-25

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	53.59	12	\$11.92	16%	25%	\$31.23	26.36	26.36	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	14.29	10	\$3.59	16%	36%	\$38.33	15.15	15.15	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	2,406.41	10	\$299.28	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	3,521.02	15	\$808.90	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,051.02	10	\$604.92	0%	0%	\$87.92	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	1,138.25	1	\$54.66	0%	0%	\$45.84	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	441.25	2	\$14.74	0%	0%	\$16.97	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	61.30	15	\$29.32	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	30.38	15	\$3.94	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	85.41	15	\$11.03	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	29.34	10	\$293.39	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	93.38	15	\$0.71	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	18.17	15	\$1.74	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	11.03	15	\$2.10	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	11.03	15	\$6.58	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	11.67	15	\$2.56	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	23.35	15	\$12.33	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	23.35	15	\$0.25	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	651.52	10	\$153.25	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	674.79	10	\$11.48	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	623.94	10	\$67.57	15%	75%	(\$2,152.42)	356.25	356.25	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	81.07	10	\$41.84	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	64.93	10	\$13.78	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	64.93	10	\$5.65	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	1,163.44	10	\$114.36	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.73	5	\$0.10	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	10.39	1	\$0.44	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	10.98	10	\$18.75	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	47.44	10	\$18.75	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.64	10	\$18.75	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	8.02	10	\$18.75	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.87	10	\$18.75	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	53.59	10	\$18.75	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	32.47	10	\$18.75	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	4.79	10	\$18.75	15%	15%	\$17.76	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	31.72	3	\$114.92	3%	11%	\$88.87	0.11	0.11	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	137.05	3	\$114.92	3%	11%	\$88.87	0.44	0.44	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	4.73	3	\$114.92	3%	11%	\$88.87	0.09	0.09	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	23.17	3	\$114.92	3%	11%	\$88.87	0.39	0.41	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	5.40	3	\$114.92	3%	11%	\$88.87	0.10	0.10	IND_SEM-Lighting-AEG-1
Metal Mfg	Motors	Strategic Energy Management	employee	Existing	154.82	3	\$114.92	3%	11%	\$88.87	3.04	3.04	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	Existing	93.79	3	\$114.92	3%	11%	\$88.87	1.84	1.84	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	13.84	3	\$114.92	3%	11%	\$88.87	0.47	0.36	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	26.73	3	\$152.74	0%	0%	\$162.44	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	6.23	3	\$152.74	0%	0%	\$162.44	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	Existing	178.63	3	\$152.74	0%	0%	\$162.44	0.00	0.00	IND_SEM-HVAC-AEG-1

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Metal Mfg	Process	Commissioning	employee	Existing	108.22	3	\$152.74	0%	0%	\$162.44	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	15.97	3	\$152.74	0%	0%	\$162.44	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	26.73	3	\$96.96	5%	39%	\$103.12	7.60	8.11	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	6.23	3	\$96.96	5%	39%	\$103.12	1.92	1.99	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	Existing	178.63	3	\$96.96	5%	39%	\$103.12	59.57	59.57	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	Existing	108.22	3	\$96.96	5%	39%	\$103.12	36.09	36.09	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	15.97	3	\$96.96	5%	39%	\$103.12	9.19	7.14	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	12.89	12	\$7.03	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	214.61	11	\$167.23	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	0.33	0.33	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	1.19	1.19	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	0.25	0.25	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.63	0.13	0.13	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.63	0.05	0.05	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.63	0.01	0.01	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.00	0.00	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	0.79	0.79	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	0.17	0.17	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	0.04	0.04	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	0.11	0.11	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.02	0.02	Building Energy Simulation Tool

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Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	0.04	0.04	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	0.44	0.44	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	0.21	0.21	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	0.07	0.07	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	0.24	0.24	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.07	5	\$0.40	18%	30%	\$1,462.95	0.10	0.10	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	0.07	0.07	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	0.84	0.84	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	5.80	5.80	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	0.04	0.04	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	0.23	0.23	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	0.83	0.83	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	0.17	0.17	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.10	15	\$0.36	22%	41%	\$436.90	9.15	9.18	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.15	15	\$0.60	22%	41%	\$514.92	12.81	12.85	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	1.06	1.07	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	1.30	1.32	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	0.66	0.67	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	0.52	0.53	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.92	0.55	0.56	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,465.82	20	\$503.96	15%	20%	\$38.23	1.84	1.84	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	9.20	15	\$9.21	20%	50%	\$125.71	0.81	0.81	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	New	14.71	15	\$6.45	20%	50%	\$54.99	1.29	1.29	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	95.38	10	\$13.99	9%	38%	\$54.93	6.45	6.45	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	71.54	12	\$21.31	9%	38%	(\$23.24)	7.00	7.00	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	71.54	10	\$22.21	9%	38%	\$47.44	6.55	6.55	PUMP_VSD-Motors-UN-v1.0-3

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Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	25.06	10	\$2.52	9%	38%	\$47.89	1.69	1.69	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	29.61	10	\$4.17	9%	38%	\$18.25	2.71	2.71	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	45.55	10	\$21.01	9%	38%	\$70.46	4.17	4.17	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	168.62	10	\$12.66	17%	50%	\$38.58	13.30	13.30	CMPAIR_EQPT-Motors-7PLN-v5-2
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	1.52	1.52	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.07	0.07	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	192.71	10	\$20.85	9%	15%	\$16.53	3.71	3.71	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	38.54	10	\$9.05	9%	38%	\$4.42	3.53	3.53	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	96.35	10	\$9.10	18%	75%	\$41.54	13.02	13.02	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	72.26	15	\$55.59	26%	45%	\$96.52	4.95	4.95	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.41	10	\$0.85	17%	50%	\$54.13	0.19	0.19	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	14.45	10	\$2.78	17%	50%	\$29.38	1.14	1.14	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	4.12	4.12	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	14.45	15	\$7.64	17%	50%	\$66.36	1.42	1.42	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	New	134.89	6	\$20.87	26%	45%	\$32.76	6.09	6.09	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	435.76	10	\$153.34	25%	45%	\$53.75	28.00	28.00	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	6.43	10	\$2.72	10%	50%	\$64.50	2.57	2.57	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.57	10	\$0.96	6%	25%	\$41.21	0.68	0.68	MTR_GRWND>100HP-Motors-7PLN-v5-25
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	53.59	12	\$11.92	16%	25%	\$31.23	5.41	5.41	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	14.29	10	\$3.59	16%	36%	\$38.33	2.02	2.02	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	2,406.41	10	\$299.28	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	3,521.02	15	\$808.90	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,051.02	10	\$604.92	0%	0%	\$87.92	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	1,138.25	1	\$54.66	0%	0%	\$45.84	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	441.25	2	\$14.74	0%	0%	\$16.97	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	61.30	15	\$29.32	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.38	15	\$3.94	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	85.41	15	\$11.03	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	New	29.34	10	\$293.39	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	93.38	15	\$0.71	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	18.17	15	\$1.74	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	11.03	15	\$2.10	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	11.03	15	\$6.58	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	11.67	15	\$2.56	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	23.35	15	\$12.33	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	23.35	15	\$0.25	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	651.52	10	\$153.25	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	674.79	10	\$11.48	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	623.94	10	\$67.57	15%	75%	(\$2,152.42)	127.32	127.32	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	81.07	10	\$41.84	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	64.93	10	\$13.78	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	64.93	10	\$5.65	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	1,163.44	10	\$114.36	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	0.73	5	\$0.10	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	10.39	1	\$0.44	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	11.65	10	\$18.75	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	47.65	10	\$18.75	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.63	10	\$18.75	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	6.80	10	\$18.75	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	1.75	10	\$18.75	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	53.59	10	\$18.75	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	New	32.47	10	\$18.75	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	4.71	10	\$18.75	15%	15%	\$17.72	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	New	33.64	3	\$114.92	3%	11%	\$88.71	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	New	137.65	3	\$114.92	3%	11%	\$88.71	0.02	0.02	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	New	4.70	3	\$114.92	3%	11%	\$88.71	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	19.65	3	\$114.92	3%	11%	\$88.71	0.01	0.01	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	5.05	3	\$114.92	3%	11%	\$88.71	0.00	0.00	IND_SEM-Lighting-AEG-1

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Metal Mfg	Motors	Strategic Energy Management	employee	New	154.82	3	\$114.92	3%	11%	\$88.71	0.12	0.12	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	New	93.79	3	\$114.92	3%	11%	\$88.71	0.07	0.07	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	13.60	3	\$114.92	3%	11%	\$88.71	0.02	0.01	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	New	22.68	3	\$152.74	5%	39%	\$164.04	0.57	0.57	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	New	5.83	3	\$152.74	5%	39%	\$164.04	0.15	0.15	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	New	178.63	3	\$152.74	5%	39%	\$164.04	7.61	7.61	IND_SEM-HVAC-AEG-1
Metal Mfg	Process	Commissioning	employee	New	108.22	3	\$152.74	5%	39%	\$164.04	4.61	4.61	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	New	15.70	3	\$152.74	5%	39%	\$164.04	0.40	0.34	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	22.68	3	\$96.96	0%	0%	\$104.13	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	5.83	3	\$96.96	0%	0%	\$104.13	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	New	178.63	3	\$96.96	0%	0%	\$104.13	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	New	108.22	3	\$96.96	0%	0%	\$104.13	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	15.70	3	\$96.96	0%	0%	\$104.13	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	12.89	12	\$7.03	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	214.61	11	\$167.23	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.13	45	\$0.84	15%	25%	\$116.36	24.49	24.95	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.56	45	\$0.84	15%	25%	\$116.36	96.13	96.28	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$116.36	19.74	20.01	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.05	20	\$0.86	15%	25%	\$1,280.79	9.55	9.73	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$1,280.79	4.07	4.07	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$1,280.79	0.83	0.85	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$40.90	0.19	0.19	Building Energy Simulation Tool

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Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.74	45	\$0.32	45%	50%	\$40.90	64.09	64.19	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.03	45	\$0.32	45%	50%	\$40.90	13.16	13.34	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.02	18	\$0.00	15%	25%	\$1.94	3.08	3.14	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.05	18	\$0.00	15%	25%	\$1.94	9.03	9.04	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	1.85	1.88	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.05	10	\$0.01	15%	45%	\$32.01	7.82	7.99	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.27	15	\$0.37	15%	60%	\$178.57	65.13	66.61	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.10	15	\$0.04	15%	75%	\$52.17	31.62	32.34	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.05	15	\$0.37	15%	60%	\$1,006.40	5.75	5.94	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.21	10	\$0.02	15%	60%	\$41.15	25.79	26.62	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.05	5	\$0.40	18%	30%	\$1,962.04	28.82	29.69	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,108.02	6.31	6.45	VENT_DCV-Ventilation-7PLN-v5-5
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.17	15	\$0.65	15%	50%	\$53.43	116.45	119.81	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.36	15	\$0.65	15%	50%	\$53.43	885.22	887.45	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,405.48	12.94	13.42	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.28	5	\$0.75	5%	15%	\$120.75	52.10	53.07	STAT_WIFI-All-7PLN-v2-1

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Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	1.18	5	\$0.75	5%	15%	\$120.75	204.48	204.81	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.04	5	\$0.75	5%	15%	\$120.75	41.99	42.57	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.10	15	\$0.36	7%	33%	\$496.02	415.72	442.31	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.14	15	\$0.60	7%	33%	\$584.60	582.01	619.23	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$13.24	2.16	2.42	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.56	80.91	82.98	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,870.58	82.85	84.97	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$90.41	100.50	105.84	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$100.68	146.55	154.35	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,402.25	100.18	105.51	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	8,409.00	20	\$2,891.05	15%	20%	\$38.23	91.58	91.58	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	105.93	15	\$106.13	20%	50%	\$125.71	50.79	50.79	RFG_FHPC-Refrigeration-RTF-v1.3-23

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	169.48	15	\$74.28	20%	50%	\$54.99	81.26	81.26	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	743.04	10	\$108.95	9%	38%	\$54.93	341.28	341.28	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	557.28	12	\$166.03	9%	38%	(\$23.24)	249.29	249.29	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	557.28	10	\$173.06	9%	38%	\$47.44	249.29	249.29	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	270.93	10	\$27.24	9%	38%	\$47.89	124.44	124.44	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	320.19	10	\$45.07	9%	38%	\$18.25	143.23	143.23	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	492.60	10	\$227.20	9%	38%	\$70.46	220.36	220.36	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	911.07	10	\$68.39	17%	50%	\$38.58	488.21	488.21	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$224.53	35.80	35.80	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$607.42	2.42	2.42	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	1,041.22	10	\$112.65	9%	15%	\$16.53	98.06	98.06	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	208.24	10	\$48.90	9%	38%	\$4.42	93.15	93.15	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	520.61	10	\$49.16	18%	75%	\$41.54	478.24	478.24	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	390.46	15	\$300.37	26%	45%	\$96.52	116.44	116.44	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	13.02	10	\$4.61	17%	50%	\$54.13	6.97	6.97	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1

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Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	78.09	10	\$15.02	17%	50%	\$29.38	41.85	41.85	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.28	118.45	118.45	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	78.09	15	\$41.30	17%	50%	\$66.36	41.85	41.85	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	728.86	6	\$112.78	26%	45%	\$32.76	217.36	217.36	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,300.54	10	\$457.65	25%	45%	\$53.75	408.26	408.26	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	30.12	10	\$12.72	10%	50%	\$64.50	97.49	97.49	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	16.73	10	\$4.51	6%	25%	\$41.21	25.73	25.73	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	251.02	12	\$55.83	16%	25%	\$31.23	192.95	192.95	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	66.94	10	\$16.80	16%	36%	\$38.33	110.95	110.95	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	13,804.90	10	\$1,716.87	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	20,199.06	15	\$4,640.44	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	4,093.80	10	\$604.92	0%	0%	\$22.57	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	6,529.79	1	\$54.66	0%	0%	\$7.99	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,531.34	2	\$14.74	0%	0%	\$2.96	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	706.17	15	\$337.71	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	30.26	15	\$3.92	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	57.76	15	\$7.46	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	228.56	10	\$2,285.55	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	217.47	15	\$1.65	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	209.35	15	\$20.00	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	127.11	15	\$24.14	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	127.11	15	\$75.82	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	27.18	15	\$5.95	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	54.37	15	\$28.72	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	54.37	15	\$0.58	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,944.49	10	\$457.37	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	2,013.94	10	\$34.25	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	2,420.67	10	\$262.15	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	349.74	10	\$180.50	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	280.13	10	\$59.46	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	280.13	10	\$24.38	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	3,472.30	10	\$341.31	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	3.14	5	\$0.42	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	31.00	1	\$1.30	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	179.98	10	\$180.66	15%	15%	\$17.78	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	777.64	10	\$180.66	15%	15%	\$17.78	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	26.84	10	\$180.66	15%	15%	\$17.78	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	95.67	10	\$180.66	15%	15%	\$17.78	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	22.31	10	\$180.66	15%	15%	\$17.78	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	251.02	10	\$180.66	15%	15%	\$17.78	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	140.06	10	\$180.66	15%	15%	\$17.78	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	54.97	10	\$180.66	15%	15%	\$17.78	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	519.93	3	\$1,107.50	3%	11%	\$89.01	2.77	2.82	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	2,246.51	3	\$1,107.50	3%	11%	\$89.01	11.25	11.27	IND_SEM-HVAC-AEG-1

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Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	77.52	3	\$1,107.50	3%	11%	\$89.01	2.30	2.33	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	276.38	3	\$1,107.50	3%	11%	\$89.01	7.22	7.71	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	64.46	3	\$1,107.50	3%	11%	\$89.01	1.83	1.89	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	725.17	3	\$1,107.50	3%	11%	\$89.01	22.23	22.23	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	404.63	3	\$1,107.50	3%	11%	\$89.01	12.41	12.41	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	158.82	3	\$1,107.50	3%	11%	\$89.01	8.40	6.53	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	318.90	3	\$814.57	0%	0%	\$153.41	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	74.37	3	\$814.57	0%	0%	\$153.41	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	Existing	836.73	3	\$814.57	0%	0%	\$153.41	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	Existing	466.88	3	\$814.57	0%	0%	\$153.41	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	183.25	3	\$814.57	0%	0%	\$153.41	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	318.90	3	\$517.11	5%	39%	\$97.39	141.71	151.23	IND_RCX-Motors-AEG-1
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	74.37	3	\$517.11	5%	39%	\$97.39	35.88	37.11	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	836.73	3	\$517.11	5%	39%	\$97.39	436.13	436.13	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	Existing	466.88	3	\$517.11	5%	39%	\$97.39	243.35	243.35	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	183.25	3	\$517.11	5%	39%	\$97.39	164.72	128.01	IND_RCX-Process-AEG-1

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Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	100.38	12	\$54.77	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,671.83	11	\$1,302.72	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.14	45	\$0.84	15%	25%	\$113.90	8.48	8.48	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.56	45	\$0.84	15%	25%	\$113.90	30.37	30.37	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$113.90	6.34	6.34	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.06	20	\$0.86	15%	25%	\$1,207.67	3.31	3.31	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$1,207.67	1.28	1.28	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$1,207.67	0.27	0.27	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$40.61	0.07	0.07	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.75	45	\$0.32	45%	50%	\$40.61	20.25	20.25	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.03	45	\$0.32	45%	50%	\$40.61	4.23	4.23	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.02	18	\$0.00	15%	25%	\$1.89	1.04	1.04	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.05	18	\$0.00	15%	25%	\$1.89	2.79	2.79	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.89	0.58	0.58	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.05	10	\$0.01	15%	45%	\$31.13	1.08	1.08	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.27	15	\$0.37	15%	60%	\$173.66	11.21	11.21	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.10	15	\$0.04	15%	75%	\$50.74	5.44	5.44	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.05	15	\$0.37	15%	60%	\$970.71	1.74	1.74	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.22	10	\$0.02	15%	60%	\$39.69	6.27	6.27	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.05	5	\$0.40	18%	30%	\$1,813.02	2.45	2.45	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$9,990.51	1.85	1.85	VENT_DCV-Ventilation-7PLN-v5-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.18	15	\$0.65	15%	50%	\$52.62	21.36	21.37	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.36	15	\$0.65	15%	50%	\$52.62	148.21	148.21	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,286.73	1.00	1.01	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.30	5	\$0.75	5%	15%	\$118.19	5.93	5.93	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	1.19	5	\$0.75	5%	15%	\$118.19	21.25	21.25	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.04	5	\$0.75	5%	15%	\$118.19	4.44	4.44	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.08	15	\$0.36	22%	41%	\$541.43	170.48	171.07	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.12	15	\$0.60	22%	41%	\$638.11	238.68	239.50	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$14.40	0.29	0.29	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.65	19.69	19.90	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,919.74	24.30	24.54	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$93.40	12.32	12.54	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$104.01	9.75	9.93	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,580.91	10.25	10.44	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	8,409.00	20	\$2,891.05	15%	20%	\$38.23	32.91	32.91	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	105.93	15	\$106.13	20%	50%	\$125.71	14.56	14.56	RFG_FHPC-Refrigeration-RTF-v1.3-23
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	169.48	15	\$74.28	20%	50%	\$54.99	23.30	23.30	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	743.04	10	\$108.95	9%	38%	\$54.93	78.47	78.47	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	557.28	12	\$166.03	9%	38%	(\$23.24)	85.19	85.19	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	557.28	10	\$173.06	9%	38%	\$47.44	79.73	79.73	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	270.93	10	\$27.24	9%	38%	\$47.89	28.61	28.61	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	320.19	10	\$45.07	9%	38%	\$18.25	45.81	45.81	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	492.60	10	\$227.20	9%	38%	\$70.46	70.48	70.48	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	911.07	10	\$68.39	17%	50%	\$38.58	112.25	112.25	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$224.53	12.86	12.86	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$607.42	0.56	0.56	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1

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Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	1,041.22	10	\$112.65	9%	15%	\$16.53	31.36	31.36	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	208.24	10	\$48.90	9%	38%	\$4.42	29.79	29.79	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	520.61	10	\$49.16	18%	75%	\$41.54	109.96	109.96	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	390.46	15	\$300.37	26%	45%	\$96.52	41.83	41.83	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	13.02	10	\$4.61	17%	50%	\$54.13	1.60	1.60	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	78.09	10	\$15.02	17%	50%	\$29.38	9.62	9.62	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.28	34.82	34.82	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	78.09	15	\$41.30	17%	50%	\$66.36	12.00	12.00	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	New	728.86	6	\$112.78	26%	45%	\$32.76	51.38	51.38	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,300.54	10	\$457.65	25%	45%	\$53.75	130.58	130.58	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	30.12	10	\$12.72	10%	50%	\$64.50	18.80	18.80	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	16.73	10	\$4.51	6%	25%	\$41.21	4.96	4.96	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	251.02	12	\$55.83	16%	25%	\$31.23	39.53	39.53	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	66.94	10	\$16.80	16%	36%	\$38.33	14.73	14.73	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	13,804.90	10	\$1,716.87	0%	0%	\$19.00	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	20,199.06	15	\$4,640.44	0%	0%	\$28.83	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	4,093.80	10	\$604.92	0%	0%	\$22.57	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	6,529.79	1	\$54.66	0%	0%	\$7.99	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	2,531.34	2	\$14.74	0%	0%	\$2.96	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	706.17	15	\$337.71	0%	0%	\$60.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.26	15	\$3.92	0%	0%	\$16.27	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	57.76	15	\$7.46	0%	0%	\$16.21	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	New	228.56	10	\$2,285.55	0%	0%	\$1,527.54	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	217.47	15	\$1.65	0%	0%	\$0.95	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	209.35	15	\$20.00	0%	0%	\$11.99	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	127.11	15	\$24.14	0%	0%	\$23.83	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	127.11	15	\$75.82	0%	0%	(\$63.03)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	27.18	15	\$5.95	0%	0%	\$27.48	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	54.37	15	\$28.72	0%	0%	(\$84.38)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	54.37	15	\$0.58	0%	0%	(\$14.46)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	1,944.49	10	\$457.37	0%	0%	\$35.93	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	2,013.94	10	\$34.25	0%	0%	(\$63.05)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	2,420.67	10	\$262.15	0%	0%	(\$2,152.42)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	349.74	10	\$180.50	0%	0%	\$78.84	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	280.13	10	\$59.46	0%	0%	\$32.42	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	280.13	10	\$24.38	0%	0%	\$13.29	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	3,472.30	10	\$341.31	0%	0%	\$15.01	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	3.14	5	\$0.42	0%	0%	\$31.99	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	31.00	1	\$1.30	0%	0%	\$40.10	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	190.86	10	\$180.66	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	781.02	10	\$180.66	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	26.66	10	\$180.66	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	81.17	10	\$180.66	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	20.87	10	\$180.66	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	251.02	10	\$180.66	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	140.06	10	\$180.66	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	54.03	10	\$180.66	15%	15%	\$17.68	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	551.38	3	\$1,107.50	3%	11%	\$88.50	0.12	0.12	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	New	2,256.29	3	\$1,107.50	3%	11%	\$88.50	0.45	0.45	IND_SEM-HVAC-AEG-1
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	77.01	3	\$1,107.50	3%	11%	\$88.50	0.09	0.09	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	234.49	3	\$1,107.50	3%	11%	\$88.50	0.28	0.28	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	60.30	3	\$1,107.50	3%	11%	\$88.50	0.07	0.07	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	New	725.17	3	\$1,107.50	3%	11%	\$88.50	0.88	0.88	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	New	404.63	3	\$1,107.50	3%	11%	\$88.50	0.49	0.49	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	156.07	3	\$1,107.50	3%	11%	\$88.50	0.31	0.22	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	New	270.57	3	\$814.57	5%	39%	\$156.59	10.54	10.60	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	69.58	3	\$814.57	5%	39%	\$156.59	2.72	2.75	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	New	836.73	3	\$814.57	5%	39%	\$156.59	55.73	55.73	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	New	466.88	3	\$814.57	5%	39%	\$156.59	31.10	31.10	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	New	180.09	3	\$814.57	5%	39%	\$156.59	7.25	6.02	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	270.57	3	\$517.11	0%	0%	\$99.40	0.00	0.00	IND_RCX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	69.58	3	\$517.11	0%	0%	\$99.40	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	New	836.73	3	\$517.11	0%	0%	\$99.40	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	New	466.88	3	\$517.11	0%	0%	\$99.40	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	180.09	3	\$517.11	0%	0%	\$99.40	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	100.38	12	\$54.77	0%	0%	\$46.53	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$40.24	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,671.83	11	\$1,302.72	0%	0%	\$114.76	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Wyoming Industrial Measures Assumptions

Table I-15 Summary of Industrial Measure Assumptions in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.03	20	\$0.11	3%	100%	\$11.42	5.13	5.13	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.77	25	\$1.04	3%	100%	\$58.30	7.84	7.84	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	Existing	0.20	25	\$0.05	11%	100%	\$26.11	3.75	3.75	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$41.25	0.37	0.37	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.21	15	\$0.12	2%	100%	\$41.25	0.61	0.61	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$56.93	20.77	20.77	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$2.25)	2.25	2.43	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.01	100%	100%	(\$1.05)	79.42	74.70	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	Existing	1.43	17	\$0.06	100%	100%	\$1.30	17.80	17.19	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$1.61)	0.27	0.25	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.92	100%	100%	(\$1.55)	19.33	18.58	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	Existing	9.86	17	\$0.24	100%	100%	\$0.73	4.46	4.35	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.06	20	\$0.11	3%	100%	\$11.07	3.96	3.96	AEG BEST
Agriculture	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.89	25	\$1.04	3%	100%	\$54.47	6.91	6.91	AEG BEST
Agriculture	Cooling	RTU	1 kBTU/hr	New	0.23	25	\$0.05	11%	100%	\$22.91	3.59	3.59	AEG BEST
Agriculture	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$36.98	0.33	0.33	AEG BEST
Agriculture	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.24	15	\$0.12	2%	100%	\$36.98	0.52	0.52	AEG BEST
Agriculture	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Agriculture	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Agriculture	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$57.11	16.49	16.49	AEG-BEST
Agriculture	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$2.25)	1.61	1.52	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.01	100%	100%	(\$1.05)	58.87	57.18	USDOE SSL Projections - 2016
Agriculture	Interior Lighting	Linear Lighting	lamps	New	1.43	17	\$0.06	100%	100%	\$1.30	10.76	10.61	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$1.61)	0.13	0.11	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.92	100%	100%	(\$1.55)	14.70	14.43	USDOE SSL Projections - 2016
Agriculture	Exterior Lighting	Linear Lighting	lamps	New	9.86	17	\$0.24	100%	100%	\$0.73	2.79	2.76	USDOE SSL Projections - 2016
Agriculture	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Agriculture	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.06	20	\$0.22	3%	100%	\$11.42	1,118.03	1,118.03	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.85	25	\$0.77	3%	100%	\$56.99	1,699.37	1,699.37	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.11	816.88	816.88	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$41.25	80.44	80.44	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.23	2%	100%	\$41.25	132.02	132.02	AEG BEST
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$56.93	4,529.11	4,529.11	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.01)	746.72	806.85	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.01)	26,371.86	24,804.99	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.00	100%	100%	\$0.01	5,912.10	5,709.71	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.01)	89.21	82.17	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.01	100%	100%	(\$0.01)	6,419.84	6,170.41	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.00	100%	100%	\$0.00	1,482.22	1,444.54	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.12	20	\$0.22	3%	100%	\$11.07	862.73	862.73	AEG BEST
Mining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.78	25	\$2.08	3%	100%	\$54.47	1,507.89	1,507.89	AEG BEST
Mining	Cooling	RTU	1 kBTU/hr	New	0.46	25	\$0.10	11%	100%	\$22.91	783.00	783.00	AEG BEST
Mining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$36.98	71.27	71.27	AEG BEST
Mining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.23	2%	100%	\$36.98	113.06	113.06	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Mining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Mining	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$57.11	3,595.73	3,595.73	AEG-BEST
Mining	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.01)	534.21	505.63	USDOE SSL Projections - 2016
Mining	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.01)	19,547.32	18,987.95	USDOE SSL Projections - 2016
Mining	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.00	100%	100%	\$0.01	3,571.49	3,523.34	USDOE SSL Projections - 2016
Mining	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.01)	43.32	36.41	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.01	100%	100%	(\$0.01)	4,880.66	4,790.24	USDOE SSL Projections - 2016
Mining	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.00	100%	100%	\$0.00	925.96	917.33	USDOE SSL Projections - 2016
Mining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Mining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.03	20	\$0.11	3%	100%	\$11.42	3.90	3.90	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.42	25	\$0.38	3%	100%	\$56.99	5.92	5.92	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.20	25	\$0.05	11%	100%	\$26.11	2.85	2.85	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$41.25	0.28	0.28	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.21	15	\$0.12	2%	100%	\$41.25	0.46	0.46	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$56.93	15.79	15.79	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.15)	4.22	4.56	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.07)	149.12	140.26	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.43	17	\$0.00	100%	100%	\$0.09	33.43	32.29	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.11)	0.50	0.46	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.06	100%	100%	(\$0.10)	36.30	34.89	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	9.86	17	\$0.02	100%	100%	\$0.05	8.38	8.17	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.06	20	\$0.11	3%	100%	\$11.07	3.01	3.01	AEG BEST
Food Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.89	25	\$1.04	3%	100%	\$54.47	5.26	5.26	AEG BEST
Food Mfg	Cooling	RTU	1 kBTU/hr	New	0.23	25	\$0.05	11%	100%	\$22.91	2.73	2.73	AEG BEST
Food Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$36.98	0.25	0.25	AEG BEST
Food Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.24	15	\$0.12	2%	100%	\$36.98	0.39	0.39	AEG BEST
Food Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Food Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Food Mfg	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$57.11	12.54	12.54	AEG-BEST
Food Mfg	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.15)	3.02	2.86	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.07)	110.53	107.37	USDOE SSL Projections - 2016
Food Mfg	Interior Lighting	Linear Lighting	lamps	New	1.43	17	\$0.00	100%	100%	\$0.09	20.19	19.92	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.11)	0.24	0.21	USDOE SSL Projections - 2016
Food Mfg	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.06	100%	100%	(\$0.10)	27.60	27.09	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Linear Lighting	lamps	New	9.86	17	\$0.02	100%	100%	\$0.05	5.24	5.19	USDOE SSL Projections - 2016
Food Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Food Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.23	20	\$0.02	3%	100%	\$11.42	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.32	25	\$0.09	3%	100%	\$56.99	0.00	0.00	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.05	25	\$0.01	11%	100%	\$26.11	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.03	15	\$0.03	2%	100%	\$41.25	0.00	0.00	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.05	15	\$0.03	2%	100%	\$41.25	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	Existing	25.22	20	\$14.78	100%	100%	\$56.93	0.01	0.01	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.39	8	\$0.00	100%	100%	(\$11.01)	0.00	0.00	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	9.04	15	\$0.01	100%	100%	(\$5.13)	0.12	0.12	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.32	17	\$0.07	100%	100%	\$6.36	0.03	0.03	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	1.13	8	\$0.00	100%	100%	(\$7.87)	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	Existing	24.24	15	\$1.00	100%	100%	(\$7.58)	0.03	0.03	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	2.19	17	\$0.26	100%	100%	\$3.57	0.01	0.01	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.24	20	\$0.02	3%	100%	\$11.07	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.42	25	\$0.23	3%	100%	\$54.47	0.00	0.00	AEG BEST
Paper Mfg	Cooling	RTU	1 kBTU/hr	New	0.05	25	\$0.01	11%	100%	\$22.91	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.03	15	\$0.03	2%	100%	\$36.98	0.00	0.00	AEG BEST
Paper Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.05	15	\$0.03	2%	100%	\$36.98	0.00	0.00	AEG BEST
Paper Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.25	0%	100%	\$0.00	0.00	0.00	AEG BEST
Paper Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation	1000 CFM	New	25.14	20	\$14.78	100%	100%	\$57.11	0.01	0.01	AEG-BEST
Paper Mfg	Interior Lighting	General Service Lighting	lamps	New	0.39	8	\$0.00	100%	100%	(\$11.01)	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	High-Bay Lighting	lamps	New	9.04	15	\$0.01	100%	100%	(\$5.13)	0.09	0.09	USDOE SSL Projections - 2016
Paper Mfg	Interior Lighting	Linear Lighting	lamps	New	0.32	17	\$0.07	100%	100%	\$6.36	0.02	0.02	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	General Service Lighting	lamps	New	1.13	8	\$0.00	100%	100%	(\$7.87)	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Area Lighting	lamps	New	24.24	15	\$1.00	100%	100%	(\$7.58)	0.02	0.02	USDOE SSL Projections - 2016
Paper Mfg	Exterior Lighting	Linear Lighting	lamps	New	2.19	17	\$0.26	100%	100%	\$3.57	0.00	0.00	USDOE SSL Projections - 2016
Paper Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Paper Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.82	20	\$0.09	3%	100%	\$11.42	72.61	72.61	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.14	25	\$0.31	3%	100%	\$56.99	110.37	110.37	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	Existing	0.16	25	\$0.04	11%	100%	\$26.11	53.05	53.05	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.10	15	\$0.09	2%	100%	\$41.25	5.22	5.22	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.17	15	\$0.09	2%	100%	\$41.25	8.57	8.57	AEG BEST
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	Existing	90.78	20	\$53.22	100%	100%	\$56.93	294.15	294.15	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	Existing	1.41	8	\$0.00	100%	100%	(\$0.02)	25.02	27.04	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	Existing	32.54	15	\$0.00	100%	100%	(\$0.01)	883.74	831.23	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	Existing	1.15	17	\$0.00	100%	100%	\$0.01	198.12	191.34	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	Existing	4.08	8	\$0.00	100%	100%	(\$0.02)	2.99	2.75	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	Existing	87.25	15	\$0.01	100%	100%	(\$0.02)	215.13	206.77	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	Existing	7.89	17	\$0.00	100%	100%	\$0.01	49.67	48.41	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.85	20	\$0.09	3%	100%	\$11.07	56.03	56.03	AEG BEST
Petroleum Refining	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.51	25	\$0.83	3%	100%	\$54.47	97.93	97.93	AEG BEST
Petroleum Refining	Cooling	RTU	1 kBTU/hr	New	0.19	25	\$0.04	11%	100%	\$22.91	50.85	50.85	AEG BEST
Petroleum Refining	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.12	15	\$0.09	2%	100%	\$36.98	4.63	4.63	AEG BEST
Petroleum Refining	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.19	15	\$0.09	2%	100%	\$36.98	7.34	7.34	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.92	0%	100%	\$0.00	0.00	0.00	AEG BEST
Petroleum Refining	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Petroleum Refining	Ventilation	Ventilation	1000 CFM	New	90.50	20	\$53.22	100%	100%	\$57.11	233.53	233.53	AEG-BEST
Petroleum Refining	Interior Lighting	General Service Lighting	lamps	New	1.41	8	\$0.00	100%	100%	(\$0.02)	17.90	16.94	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	High-Bay Lighting	lamps	New	32.54	15	\$0.00	100%	100%	(\$0.01)	655.04	636.30	USDOE SSL Projections - 2016
Petroleum Refining	Interior Lighting	Linear Lighting	lamps	New	1.15	17	\$0.00	100%	100%	\$0.01	119.68	118.07	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	General Service Lighting	lamps	New	4.08	8	\$0.00	100%	100%	(\$0.02)	1.45	1.22	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Area Lighting	lamps	New	87.25	15	\$0.01	100%	100%	(\$0.02)	163.55	160.52	USDOE SSL Projections - 2016
Petroleum Refining	Exterior Lighting	Linear Lighting	lamps	New	7.89	17	\$0.00	100%	100%	\$0.01	31.03	30.74	USDOE SSL Projections - 2016
Petroleum Refining	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Petroleum Refining	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.06	20	\$0.22	3%	100%	\$11.42	51.66	51.66	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.85	25	\$0.77	3%	100%	\$56.99	78.53	78.53	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.11	37.75	37.75	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$41.25	3.72	3.72	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.23	2%	100%	\$41.25	6.10	6.10	AEG BEST
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBtu/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$56.93	209.29	209.29	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.01)	21.79	23.55	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	\$0.00	769.62	723.90	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.00	100%	100%	\$0.00	172.54	166.63	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.01)	2.60	2.40	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.01	100%	100%	(\$0.01)	187.35	180.07	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.00	100%	100%	\$0.00	43.26	42.16	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.12	20	\$0.22	3%	100%	\$11.07	39.87	39.87	AEG BEST
Stone Clay Glass Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.78	25	\$2.08	3%	100%	\$54.47	69.68	69.68	AEG BEST
Stone Clay Glass Products	Cooling	RTU	1 kBTU/hr	New	0.46	25	\$0.10	11%	100%	\$22.91	36.18	36.18	AEG BEST
Stone Clay Glass Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$36.98	3.29	3.29	AEG BEST
Stone Clay Glass Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.23	2%	100%	\$36.98	5.22	5.22	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Stone Clay Glass Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$57.11	166.16	166.16	AEG-BEST
Stone Clay Glass Products	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.01)	15.59	14.76	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	\$0.00	570.46	554.14	USDOE SSL Projections - 2016
Stone Clay Glass Products	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.00	100%	100%	\$0.00	104.23	102.82	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.01)	1.26	1.06	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.01	100%	100%	(\$0.01)	142.43	139.80	USDOE SSL Projections - 2016
Stone Clay Glass Products	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.00	100%	100%	\$0.00	27.02	26.77	USDOE SSL Projections - 2016
Stone Clay Glass Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Stone Clay Glass Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	0.41	20	\$0.04	3%	100%	\$11.42	5.98	5.98	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	0.57	25	\$0.15	3%	100%	\$56.99	9.09	9.09	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.08	25	\$0.02	11%	100%	\$26.11	4.37	4.37	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.05	15	\$0.05	2%	100%	\$41.25	0.43	0.43	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.09	15	\$0.05	2%	100%	\$41.25	0.71	0.71	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	45.39	20	\$26.61	100%	100%	\$56.93	24.23	24.23	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	0.71	8	\$0.00	100%	100%	(\$0.36)	2.24	2.42	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	16.27	15	\$0.00	100%	100%	(\$0.17)	78.96	74.26	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	0.57	17	\$0.00	100%	100%	\$0.21	17.70	17.09	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	2.04	8	\$0.00	100%	100%	(\$0.26)	0.27	0.25	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	43.62	15	\$0.06	100%	100%	(\$0.25)	19.22	18.47	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	3.94	17	\$0.02	100%	100%	\$0.12	4.44	4.32	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	0.42	20	\$0.04	3%	100%	\$11.07	4.61	4.61	AEG BEST
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	0.76	25	\$0.42	3%	100%	\$54.47	8.07	8.07	AEG BEST
Transportation Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.09	25	\$0.02	11%	100%	\$22.91	4.19	4.19	AEG BEST
Transportation Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.06	15	\$0.05	2%	100%	\$36.98	0.38	0.38	AEG BEST
Transportation Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.09	15	\$0.05	2%	100%	\$36.98	0.60	0.60	AEG BEST
Transportation Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$0.46	0%	100%	\$0.00	0.00	0.00	AEG BEST
Transportation Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	45.25	20	\$26.61	100%	100%	\$57.11	19.23	19.23	AEG-BEST
Transportation Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	0.71	8	\$0.00	100%	100%	(\$0.36)	1.60	1.51	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	16.27	15	\$0.00	100%	100%	(\$0.17)	58.52	56.85	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	0.57	17	\$0.00	100%	100%	\$0.21	10.69	10.55	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	2.04	8	\$0.00	100%	100%	(\$0.26)	0.13	0.11	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	43.62	15	\$0.06	100%	100%	(\$0.25)	14.61	14.34	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	3.94	17	\$0.02	100%	100%	\$0.12	2.77	2.75	USDOE SSL Projections - 2016
Transportation Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Transportation Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.57	20	\$0.27	3%	100%	\$11.42	6.27	6.27	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.56	25	\$0.96	3%	100%	\$56.99	9.53	9.53	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	Existing	0.51	25	\$0.13	11%	100%	\$26.11	4.58	4.58	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$0.29	2%	100%	\$41.25	0.45	0.45	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.54	15	\$0.29	2%	100%	\$41.25	0.74	0.74	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	Existing	283.67	20	\$166.32	100%	100%	\$56.93	25.40	25.40	AEG-BEST
Wastewater	Interior Lighting	General Service Lighting	lamps	Existing	4.41	8	\$0.00	100%	100%	(\$0.13)	3.00	3.24	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	Existing	101.69	15	\$0.00	100%	100%	(\$0.06)	105.93	99.64	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	Existing	3.58	17	\$0.01	100%	100%	\$0.07	23.75	22.94	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	Existing	12.75	8	\$0.00	100%	100%	(\$0.09)	0.36	0.33	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Exterior Lighting	Area Lighting	lamps	Existing	272.65	15	\$0.13	100%	100%	(\$0.09)	25.79	24.79	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	Existing	24.65	17	\$0.03	100%	100%	\$0.04	5.95	5.80	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.66	20	\$0.27	3%	100%	\$11.07	4.84	4.84	AEG BEST
Wastewater	Cooling	Water-Cooled Chiller	1 kbtu/h	New	4.73	25	\$2.60	3%	100%	\$54.47	8.46	8.46	AEG BEST
Wastewater	Cooling	RTU	1 kBTU/hr	New	0.58	25	\$0.13	11%	100%	\$22.91	4.39	4.39	AEG BEST
Wastewater	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.37	15	\$0.29	2%	100%	\$36.98	0.40	0.40	AEG BEST
Wastewater	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.59	15	\$0.29	2%	100%	\$36.98	0.63	0.63	AEG BEST
Wastewater	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Wastewater	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Wastewater	Ventilation	Ventilation	1000 CFM	New	282.80	20	\$166.32	100%	100%	\$57.11	20.16	20.16	AEG-BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Wastewater	Interior Lighting	General Service Lighting	lamps	New	4.41	8	\$0.00	100%	100%	(\$0.13)	2.15	2.03	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	High-Bay Lighting	lamps	New	101.69	15	\$0.00	100%	100%	(\$0.06)	78.52	76.27	USDOE SSL Projections - 2016
Wastewater	Interior Lighting	Linear Lighting	lamps	New	3.58	17	\$0.01	100%	100%	\$0.07	14.35	14.15	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	General Service Lighting	lamps	New	12.75	8	\$0.00	100%	100%	(\$0.09)	0.17	0.15	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Area Lighting	lamps	New	272.65	15	\$0.13	100%	100%	(\$0.09)	19.61	19.24	USDOE SSL Projections - 2016
Wastewater	Exterior Lighting	Linear Lighting	lamps	New	24.65	17	\$0.03	100%	100%	\$0.04	3.72	3.68	USDOE SSL Projections - 2016
Wastewater	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Wastewater	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.57	20	\$0.27	3%	100%	\$11.42	8.00	8.00	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	3.56	25	\$0.96	3%	100%	\$56.99	12.15	12.15	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	Existing	0.51	25	\$0.13	11%	100%	\$26.11	5.84	5.84	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.33	15	\$0.29	2%	100%	\$41.25	0.58	0.58	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.54	15	\$0.29	2%	100%	\$41.25	0.94	0.94	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	Existing	283.67	20	\$166.32	100%	100%	\$56.93	32.39	32.39	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	Existing	4.41	8	\$0.00	100%	100%	(\$0.28)	3.83	4.13	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	Existing	101.69	15	\$0.00	100%	100%	(\$0.13)	135.11	127.08	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	Existing	3.58	17	\$0.02	100%	100%	\$0.16	30.29	29.25	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	Existing	12.75	8	\$0.00	100%	100%	(\$0.20)	0.46	0.42	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	Existing	272.65	15	\$0.29	100%	100%	(\$0.19)	32.89	31.61	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	Existing	24.65	17	\$0.07	100%	100%	\$0.09	7.59	7.40	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.66	20	\$0.27	3%	100%	\$11.07	6.17	6.17	AEG BEST
Water	Cooling	Water-Cooled Chiller	1 kbtu/h	New	4.73	25	\$2.60	3%	100%	\$54.47	10.78	10.78	AEG BEST
Water	Cooling	RTU	1 kBTU/hr	New	0.58	25	\$0.13	11%	100%	\$22.91	5.60	5.60	AEG BEST
Water	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.37	15	\$0.29	2%	100%	\$36.98	0.51	0.51	AEG BEST
Water	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.59	15	\$0.29	2%	100%	\$36.98	0.81	0.81	AEG BEST
Water	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.86	0%	100%	\$0.00	0.00	0.00	AEG BEST
Water	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Water	Ventilation	Ventilation	1000 CFM	New	282.80	20	\$166.32	100%	100%	\$57.11	25.72	25.72	AEG-BEST
Water	Interior Lighting	General Service Lighting	lamps	New	4.41	8	\$0.00	100%	100%	(\$0.28)	2.74	2.59	USDOE SSL Projections - 2016
Water	Interior Lighting	High-Bay Lighting	lamps	New	101.69	15	\$0.00	100%	100%	(\$0.13)	100.15	97.28	USDOE SSL Projections - 2016
Water	Interior Lighting	Linear Lighting	lamps	New	3.58	17	\$0.02	100%	100%	\$0.16	18.30	18.05	USDOE SSL Projections - 2016
Water	Exterior Lighting	General Service Lighting	lamps	New	12.75	8	\$0.00	100%	100%	(\$0.20)	0.22	0.19	USDOE SSL Projections - 2016
Water	Exterior Lighting	Area Lighting	lamps	New	272.65	15	\$0.29	100%	100%	(\$0.19)	25.00	24.54	USDOE SSL Projections - 2016
Water	Exterior Lighting	Linear Lighting	lamps	New	24.65	17	\$0.07	100%	100%	\$0.09	4.74	4.70	USDOE SSL Projections - 2016
Water	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Heating	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Water	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Water	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.06	20	\$0.22	3%	100%	\$11.42	127.53	127.53	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.85	25	\$0.77	3%	100%	\$56.99	193.84	193.84	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.11	93.18	93.18	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$41.25	9.17	9.17	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.23	2%	100%	\$41.25	15.06	15.06	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$56.93	516.61	516.61	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	\$0.00	41.65	45.00	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	\$0.00	1,470.96	1,383.57	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.00	100%	100%	\$0.00	329.76	318.48	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	\$0.00	4.98	4.58	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.00	100%	100%	\$0.00	358.08	344.17	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.00	100%	100%	\$0.00	82.67	80.57	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.12	20	\$0.22	3%	100%	\$11.07	98.41	98.41	AEG BEST
Chemical Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.78	25	\$2.08	3%	100%	\$54.47	172.00	172.00	AEG BEST
Chemical Mfg	Cooling	RTU	1 kBTU/hr	New	0.46	25	\$0.10	11%	100%	\$22.91	89.31	89.31	AEG BEST
Chemical Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$36.98	8.13	8.13	AEG BEST
Chemical Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.23	2%	100%	\$36.98	12.90	12.90	AEG BEST
Chemical Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Chemical Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Chemical Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$57.11	410.15	410.15	AEG-BEST
Chemical Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	\$0.00	29.80	28.20	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	\$0.00	1,090.31	1,059.11	USDOE SSL Projections - 2016
Chemical Mfg	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.00	100%	100%	\$0.00	199.21	196.52	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	\$0.00	2.42	2.03	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.00	100%	100%	\$0.00	272.23	267.19	USDOE SSL Projections - 2016
Chemical Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.00	100%	100%	\$0.00	51.65	51.17	USDOE SSL Projections - 2016
Chemical Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Chemical Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.06	20	\$0.22	3%	100%	\$11.42	22.29	22.29	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.85	25	\$0.77	3%	100%	\$56.99	33.88	33.88	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.11	16.29	16.29	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$41.25	1.60	1.60	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.23	2%	100%	\$41.25	2.63	2.63	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$56.93	90.29	90.29	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.18)	4.72	5.10	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.08)	166.55	156.66	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.01	100%	100%	\$0.10	37.34	36.06	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.13)	0.56	0.52	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.14	100%	100%	(\$0.12)	40.55	38.97	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.04	100%	100%	\$0.06	9.36	9.12	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.12	20	\$0.22	3%	100%	\$11.07	17.20	17.20	AEG BEST
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.78	25	\$2.08	3%	100%	\$54.47	30.06	30.06	AEG BEST
Electronic Equipment Mfg	Cooling	RTU	1 kBTU/hr	New	0.46	25	\$0.10	11%	100%	\$22.91	15.61	15.61	AEG BEST
Electronic Equipment Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$36.98	1.42	1.42	AEG BEST
Electronic Equipment Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.23	2%	100%	\$36.98	2.25	2.25	AEG BEST
Electronic Equipment Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Electronic Equipment Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$57.11	71.68	71.68	AEG-BEST
Electronic Equipment Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.18)	3.37	3.19	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.08)	123.45	119.92	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.01	100%	100%	\$0.10	22.56	22.25	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.13)	0.27	0.23	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.14	100%	100%	(\$0.12)	30.82	30.25	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.04	100%	100%	\$0.06	5.85	5.79	USDOE SSL Projections - 2016
Electronic Equipment Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Electronic Equipment Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.03	20	\$0.11	3%	100%	\$11.42	18.74	18.74	AEG BEST
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.42	25	\$0.38	3%	100%	\$56.99	28.48	28.48	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	Existing	0.20	25	\$0.05	11%	100%	\$26.11	13.69	13.69	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$41.25	1.35	1.35	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.21	15	\$0.12	2%	100%	\$41.25	2.21	2.21	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$56.93	75.90	75.90	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.25)	5.92	6.39	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.11)	208.91	196.50	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	Existing	1.43	17	\$0.01	100%	100%	\$0.14	46.83	45.23	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.18)	0.71	0.65	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.10	100%	100%	(\$0.17)	50.86	48.88	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	Existing	9.86	17	\$0.03	100%	100%	\$0.08	11.74	11.44	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.06	20	\$0.11	3%	100%	\$11.07	14.46	14.46	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.89	25	\$1.04	3%	100%	\$54.47	25.27	25.27	AEG BEST
Industrial Machinery	Cooling	RTU	1 kBTU/hr	New	0.23	25	\$0.05	11%	100%	\$22.91	13.12	13.12	AEG BEST
Industrial Machinery	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$36.98	1.19	1.19	AEG BEST
Industrial Machinery	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.24	15	\$0.12	2%	100%	\$36.98	1.89	1.89	AEG BEST
Industrial Machinery	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Industrial Machinery	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Industrial Machinery	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$57.11	60.26	60.26	AEG-BEST
Industrial Machinery	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.25)	4.23	4.01	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.11)	154.85	150.42	USDOE SSL Projections - 2016
Industrial Machinery	Interior Lighting	Linear Lighting	lamps	New	1.43	17	\$0.01	100%	100%	\$0.14	28.29	27.91	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.18)	0.34	0.29	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.10	100%	100%	(\$0.17)	38.66	37.95	USDOE SSL Projections - 2016
Industrial Machinery	Exterior Lighting	Linear Lighting	lamps	New	9.86	17	\$0.03	100%	100%	\$0.08	7.34	7.27	USDOE SSL Projections - 2016
Industrial Machinery	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Industrial Machinery	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	0%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Industrial Machinery	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.06	20	\$0.22	3%	100%	\$11.42	3.38	3.38	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.85	25	\$0.77	3%	100%	\$56.99	5.13	5.13	AEG BEST
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.11	2.47	2.47	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$41.25	0.24	0.24	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.23	2%	100%	\$41.25	0.40	0.40	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$56.93	13.68	13.68	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.07)	2.54	2.74	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.03)	89.66	84.33	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.00	100%	100%	\$0.04	20.10	19.41	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.05)	0.30	0.28	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.06	100%	100%	(\$0.05)	21.83	20.98	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.02	100%	100%	\$0.02	5.04	4.91	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.12	20	\$0.22	3%	100%	\$11.07	2.61	2.61	AEG BEST
Lumber Wood Products	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.78	25	\$2.08	3%	100%	\$54.47	4.55	4.55	AEG BEST

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Cooling	RTU	1 kBTU/hr	New	0.46	25	\$0.10	11%	100%	\$22.91	2.36	2.36	AEG BEST
Lumber Wood Products	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$36.98	0.22	0.22	AEG BEST
Lumber Wood Products	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.23	2%	100%	\$36.98	0.34	0.34	AEG BEST
Lumber Wood Products	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Lumber Wood Products	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$57.11	10.86	10.86	AEG-BEST
Lumber Wood Products	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.07)	1.82	1.72	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.03)	66.46	64.55	USDOE SSL Projections - 2016
Lumber Wood Products	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.00	100%	100%	\$0.04	12.14	11.98	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.05)	0.15	0.12	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.06	100%	100%	(\$0.05)	16.59	16.29	USDOE SSL Projections - 2016
Lumber Wood Products	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.02	100%	100%	\$0.02	3.15	3.12	USDOE SSL Projections - 2016
Lumber Wood Products	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Lumber Wood Products	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Lumber Wood Products	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	1.03	20	\$0.11	3%	100%	\$11.42	23.81	23.81	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	1.42	25	\$0.38	3%	100%	\$56.99	36.20	36.20	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.20	25	\$0.05	11%	100%	\$26.11	17.40	17.40	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.13	15	\$0.12	2%	100%	\$41.25	1.71	1.71	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.21	15	\$0.12	2%	100%	\$41.25	2.81	2.81	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	Existing	113.47	20	\$66.53	100%	100%	\$56.93	96.47	96.47	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	Existing	1.77	8	\$0.00	100%	100%	(\$0.07)	11.12	12.01	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	40.68	15	\$0.00	100%	100%	(\$0.03)	392.65	369.33	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	Existing	1.43	17	\$0.00	100%	100%	\$0.04	88.03	85.01	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	5.10	8	\$0.00	100%	100%	(\$0.05)	1.33	1.22	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	Existing	109.06	15	\$0.03	100%	100%	(\$0.05)	95.59	91.87	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	9.86	17	\$0.01	100%	100%	\$0.02	22.07	21.51	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	1.06	20	\$0.11	3%	100%	\$11.07	18.38	18.38	AEG BEST
Metal Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	1.89	25	\$1.04	3%	100%	\$54.47	32.12	32.12	AEG BEST
Metal Mfg	Cooling	RTU	1 kBTU/hr	New	0.23	25	\$0.05	11%	100%	\$22.91	16.68	16.68	AEG BEST
Metal Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.15	15	\$0.12	2%	100%	\$36.98	1.52	1.52	AEG BEST
Metal Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.24	15	\$0.12	2%	100%	\$36.98	2.41	2.41	AEG BEST
Metal Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$1.14	0%	100%	\$0.00	0.00	0.00	AEG BEST
Metal Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Metal Mfg	Ventilation	Ventilation	1000 CFM	New	113.12	20	\$66.53	100%	100%	\$57.11	76.59	76.59	AEG-BEST
Metal Mfg	Interior Lighting	General Service Lighting	lamps	New	1.77	8	\$0.00	100%	100%	(\$0.07)	7.95	7.53	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	High-Bay Lighting	lamps	New	40.68	15	\$0.00	100%	100%	(\$0.03)	291.04	282.71	USDOE SSL Projections - 2016
Metal Mfg	Interior Lighting	Linear Lighting	lamps	New	1.43	17	\$0.00	100%	100%	\$0.04	53.18	52.46	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	General Service Lighting	lamps	New	5.10	8	\$0.00	100%	100%	(\$0.05)	0.65	0.54	USDOE SSL Projections - 2016
Metal Mfg	Exterior Lighting	Area Lighting	lamps	New	109.06	15	\$0.03	100%	100%	(\$0.05)	72.67	71.32	USDOE SSL Projections - 2016

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Metal Mfg	Exterior Lighting	Linear Lighting	lamps	New	9.86	17	\$0.01	100%	100%	\$0.02	13.79	13.66	USDOE SSL Projections - 2016
Metal Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Metal Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	Existing	2.06	20	\$0.22	3%	100%	\$11.42	27.01	27.01	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	Existing	2.85	25	\$0.77	3%	100%	\$56.99	41.06	41.06	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	Existing	0.41	25	\$0.10	11%	100%	\$26.11	19.74	19.74	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	Existing	0.26	15	\$0.23	2%	100%	\$41.25	1.94	1.94	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	Existing	0.43	15	\$0.23	2%	100%	\$41.25	3.19	3.19	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	Existing	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	Existing	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	Existing	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	Existing	226.94	20	\$133.06	100%	100%	\$56.93	109.42	109.42	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	Existing	3.53	8	\$0.00	100%	100%	(\$0.09)	9.18	9.92	USDOE SSL Projections - 2016

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Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	Existing	81.35	15	\$0.00	100%	100%	(\$0.04)	324.18	304.92	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	Existing	2.86	17	\$0.00	100%	100%	\$0.05	72.68	70.19	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	Existing	10.20	8	\$0.00	100%	100%	(\$0.06)	1.10	1.01	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	Existing	218.12	15	\$0.07	100%	100%	(\$0.06)	78.92	75.85	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	Existing	19.72	17	\$0.02	100%	100%	\$0.03	18.22	17.76	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	Existing	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	Existing	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Cooling	Air-Cooled Chiller	1 kbtu/h	New	2.12	20	\$0.22	3%	100%	\$11.07	20.84	20.84	AEG BEST
Misc. Mfg	Cooling	Water-Cooled Chiller	1 kbtu/h	New	3.78	25	\$2.08	3%	100%	\$54.47	36.43	36.43	AEG BEST
Misc. Mfg	Cooling	RTU	1 kBTU/hr	New	0.46	25	\$0.10	11%	100%	\$22.91	18.92	18.92	AEG BEST
Misc. Mfg	Cooling	Air-Source Heat Pump	1 kbtu/h	New	0.30	15	\$0.23	2%	100%	\$36.98	1.72	1.72	AEG BEST
Misc. Mfg	Heating	Air-Source Heat Pump	1 kbtu/h	New	0.47	15	\$0.23	2%	100%	\$36.98	2.73	2.73	AEG BEST
Misc. Mfg	Cooling	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST

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Misc. Mfg	Heating	Geothermal Heat Pump	1 kbtu/h	New	0.00	25	\$2.29	0%	100%	\$0.00	0.00	0.00	AEG BEST
Misc. Mfg	Heating	Electric Furnace	1 kBTU/hr	New	0.00	18	\$0.00	1%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Heating	Electric Room Heat	3.5 kBTU/hr	New	0.00	18	\$0.00	4%	100%	\$0.00	0.00	0.00	AEG-BEST
Misc. Mfg	Ventilation	Ventilation	1000 CFM	New	226.24	20	\$133.06	100%	100%	\$57.11	86.87	86.87	AEG-BEST
Misc. Mfg	Interior Lighting	General Service Lighting	lamps	New	3.53	8	\$0.00	100%	100%	(\$0.09)	6.57	6.22	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	High-Bay Lighting	lamps	New	81.35	15	\$0.00	100%	100%	(\$0.04)	240.29	233.41	USDOE SSL Projections - 2016
Misc. Mfg	Interior Lighting	Linear Lighting	lamps	New	2.86	17	\$0.00	100%	100%	\$0.05	43.90	43.31	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	General Service Lighting	lamps	New	10.20	8	\$0.00	100%	100%	(\$0.06)	0.53	0.45	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Area Lighting	lamps	New	218.12	15	\$0.07	100%	100%	(\$0.06)	60.00	58.88	USDOE SSL Projections - 2016
Misc. Mfg	Exterior Lighting	Linear Lighting	lamps	New	19.72	17	\$0.02	100%	100%	\$0.03	11.38	11.28	USDOE SSL Projections - 2016
Misc. Mfg	Motors	Pumps	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Fans & Blowers	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Compressed Air	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Material Handling	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Motors	Other Motors	1 unit	New	0.00	10	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Heating	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Cooling	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Refrigeration	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Electrochemical	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Process	Process Other	1 unit	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A
Misc. Mfg	Miscellaneous	Miscellaneous	1 unit	New	0.00	5	\$0.00	100%	100%	\$0.00	0.00	0.00	N/A

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	1.95	1.99	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	1.43	1.43	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	0.86	0.87	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	0.76	0.78	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.06	0.06	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.04	0.04	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.01	0.02	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	0.95	0.96	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	0.58	0.58	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	0.25	0.25	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.13	0.13	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.08	0.08	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	0.63	0.64	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	5.21	5.31	AEG-BEST
Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	2.53	2.58	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	0.47	0.48	CHLR_VSPMP-Cooling-SCE-17_R0-86

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Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	2.10	2.16	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	Existing	0.02	5	\$0.40	18%	30%	\$6,198.97	2.25	2.31	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	0.29	0.30	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	9.11	9.33	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	12.91	12.98	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	0.64	0.66	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	3.62	3.69	STAT_WIFI-All-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	2.65	2.66	STAT_WIFI-All-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	1.60	1.61	STAT_WIFI-All-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.01	15	\$0.36	3%	17%	\$4,055.46	8.44	8.99	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.02	15	\$0.60	3%	17%	\$4,779.65	12.13	12.92	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.08	0.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	3.20	3.27	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1

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Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	3.28	3.35	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	3.86	4.02	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	5.63	5.86	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	3.85	4.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	403.30	20	\$138.66	15%	20%	\$36.88	13.02	13.02	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	Existing	7.81	15	\$7.83	20%	50%	\$122.12	20.54	20.54	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	Existing	12.50	15	\$5.48	20%	50%	\$53.42	32.87	32.87	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	Existing	4.64	10	\$0.68	9%	38%	\$55.29	11.68	11.68	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	Existing	3.48	12	\$1.04	9%	38%	(\$25.77)	8.62	8.62	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	Existing	3.48	10	\$1.08	9%	38%	\$46.53	8.62	8.62	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	Existing	15.89	10	\$1.60	9%	38%	\$48.38	40.03	40.03	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	Existing	18.78	10	\$2.64	9%	38%	\$17.76	46.52	46.52	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	Existing	28.90	10	\$13.33	9%	38%	\$69.11	71.57	71.57	FAN_VSD-Motors-UN-v1.0-5
Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	Existing	10.74	10	\$0.81	17%	50%	\$39.01	31.55	31.55	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	2.34	2.34	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1

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Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.16	0.16	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	12.27	10	\$1.33	9%	15%	\$16.21	6.40	6.40	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	Existing	2.45	10	\$0.58	9%	38%	\$2.98	6.08	6.08	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	Existing	6.14	10	\$0.58	18%	75%	\$41.91	30.91	30.91	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	Existing	4.60	15	\$3.54	26%	45%	\$93.77	7.60	7.60	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.15	10	\$0.05	17%	50%	\$53.10	0.45	0.45	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	0.92	10	\$0.18	17%	50%	\$28.82	2.70	2.70	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	7.65	7.65	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	0.92	15	\$0.49	17%	50%	\$64.46	2.70	2.70	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	Existing	8.59	6	\$1.33	26%	45%	\$32.53	14.18	14.18	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	Existing	33.25	10	\$11.70	25%	45%	\$52.72	57.80	57.80	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.85	10	\$0.36	10%	50%	\$63.27	11.76	11.76	MTR_GRWND<100HP-Motors-7PLN-v5-17
Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.47	10	\$0.13	6%	25%	\$40.42	3.10	3.10	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	7.05	12	\$1.57	16%	25%	\$30.51	23.28	23.28	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	Existing	1.88	10	\$0.47	16%	36%	\$37.60	13.26	13.26	DRV_SYNBELT-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	Existing	1,830.26	10	\$227.62	8%	17%	\$18.63	106.38	106.38	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	Existing	2,678.00	15	\$615.23	8%	17%	\$28.00	155.66	155.66	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	268.67	10	\$604.92	15%	17%	\$337.34	2.33	2.33	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	865.72	1	\$54.66	15%	17%	\$61.31	11.18	11.18	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	335.61	2	\$14.74	15%	17%	\$22.56	4.33	4.33	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	Existing	52.09	15	\$24.91	15%	15%	\$58.29	1.81	1.81	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	5.17	15	\$0.67	15%	30%	\$15.81	3.58	3.58	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	4.89	15	\$0.63	8%	16%	\$15.74	1.22	1.22	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	Existing	7.50	10	\$75.00	15%	15%	\$1,498.31	1.83	1.83	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	Existing	0.80	15	\$0.01	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	Existing	15.44	15	\$1.48	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Clean Room HVAC	employee	Existing	9.38	15	\$1.78	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	9.38	15	\$5.59	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.10	15	\$0.02	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.20	15	\$0.11	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.20	15	\$0.00	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	Existing	49.72	10	\$11.69	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	51.49	10	\$0.88	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	Existing	27.86	10	\$3.02	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	Existing	10.49	10	\$5.41	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	Existing	8.40	10	\$1.78	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	Existing	8.40	10	\$0.73	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	Existing	88.78	10	\$8.73	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	Existing	0.09	5	\$0.01	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.79	1	\$0.03	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	Existing	2.66	10	\$2.32	15%	15%	\$17.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Heating	Transformer - High Efficiency	employee	Existing	5.67	10	\$2.32	15%	15%	\$17.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	Existing	0.21	10	\$2.32	15%	15%	\$17.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.69	10	\$2.32	15%	15%	\$17.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.16	10	\$2.32	15%	15%	\$17.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	Existing	5.64	10	\$2.32	15%	15%	\$17.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	Existing	4.20	10	\$2.32	15%	15%	\$17.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.69	10	\$2.32	15%	15%	\$17.38	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	Existing	7.68	3	\$4.66	3%	11%	\$29.20	0.22	0.22	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	Existing	16.37	3	\$4.66	3%	11%	\$29.20	0.17	0.17	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	Existing	0.62	3	\$4.66	3%	11%	\$29.20	0.10	0.10	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	Existing	2.00	3	\$4.66	3%	11%	\$29.20	0.28	0.30	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	Existing	0.47	3	\$4.66	3%	11%	\$29.20	0.07	0.07	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	Existing	16.29	3	\$4.66	3%	11%	\$29.20	2.71	2.71	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	Existing	12.13	3	\$4.66	3%	11%	\$29.20	2.02	2.02	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	Existing	2.00	3	\$4.66	3%	11%	\$29.20	0.57	0.47	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	Existing	2.31	3	\$17.00	0%	0%	\$159.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Exterior Lighting	Commissioning	employee	Existing	0.54	3	\$17.00	0%	0%	\$159.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	Existing	18.80	3	\$17.00	0%	0%	\$159.86	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	Existing	14.00	3	\$17.00	0%	0%	\$159.86	0.00	0.00	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	Existing	2.31	3	\$17.00	0%	0%	\$159.86	0.00	0.00	IND_SEM-Lighting-AEG-1

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Agriculture	Interior Lighting	Retrocommissioning	employee	Existing	2.31	3	\$10.79	5%	39%	\$101.48	5.55	5.84	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	Existing	0.54	3	\$10.79	5%	39%	\$101.48	1.41	1.44	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	Existing	18.80	3	\$10.79	5%	39%	\$101.48	53.17	53.17	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	Existing	14.00	3	\$10.79	5%	39%	\$101.48	39.60	39.60	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	Existing	2.31	3	\$10.79	5%	39%	\$101.48	11.27	9.21	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	0.63	12	\$0.34	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	10.44	11	\$8.13	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	0.85	0.85	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	0.58	0.58	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	0.34	0.34	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	0.33	0.33	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.02	0.02	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.01	0.01	Building Energy Simulation Tool
Agriculture	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.01	0.01	Building Energy Simulation Tool
Agriculture	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	0.39	0.39	Building Energy Simulation Tool
Agriculture	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.23	0.23	Building Energy Simulation Tool
Agriculture	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.11	0.11	Building Energy Simulation Tool
Agriculture	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.05	0.05	Building Energy Simulation Tool
Agriculture	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.03	0.03	Building Energy Simulation Tool
Agriculture	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.11	0.11	AEG-BEST
Agriculture	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	1.28	1.28	AEG-BEST

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Agriculture	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	0.62	0.62	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Agriculture	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.12	0.12	CHLR_VSPMP-Cooling-SCE-17_R0-86
Agriculture	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	0.37	0.37	AEG-BEST
Agriculture	Cooling	HVAC - Economizer	sqft	New	0.02	5	\$0.40	18%	30%	\$5,763.94	0.20	0.20	AEG-BEST
Agriculture	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.07	0.07	VENT_DCV-Ventilation-7PLN-v5-5
Agriculture	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	2.38	2.38	HVLS-Cooling-AEG-1
Agriculture	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	3.14	3.14	HVLS-Heating-AEG-1
Agriculture	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Agriculture	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	0.68	0.68	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	0.46	0.46	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	0.27	0.27	STAT_WIFI-AII-7PLN-v2-1
Agriculture	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.01	15	\$0.36	22%	41%	\$4,422.11	7.10	7.14	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.01	15	\$0.60	22%	41%	\$5,211.77	9.94	9.99	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Agriculture	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Agriculture	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Agriculture	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Agriculture	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	0.58	0.58	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Agriculture	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	0.82	0.82	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Agriculture	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	0.57	0.57	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Agriculture	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	0.43	0.44	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Agriculture	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	0.44	0.45	CLTG_EXT_PV-Exterior Lighting-AEG-2
Agriculture	Miscellaneous	High Efficiency Battery Chargers	Unit	New	403.30	20	\$138.66	15%	20%	\$36.88	4.06	4.06	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Agriculture	Process	Refrigeration - Floating Head Pressure	employee	New	7.81	15	\$7.83	20%	50%	\$122.12	4.85	4.85	RFG_FHPC-Refrigeration-RTF-v1.3-23
Agriculture	Process	Refrigeration - System Optimization	employee	New	12.50	15	\$5.48	20%	50%	\$53.42	7.76	7.76	AEG Research - prior study
Agriculture	Motors	Pumping System - Equipment Upgrade	employee	New	4.64	10	\$0.68	9%	38%	\$55.29	1.92	1.92	PUMP_EQPT-Motors-7PLN-v5-1
Agriculture	Motors	Pumping System - System Optimization	employee	New	3.48	12	\$1.04	9%	38%	(\$25.77)	2.06	2.06	PUMP_SYSOPT-Motors-UN-v1.0-5
Agriculture	Motors	Pumping System - Variable Speed Drive	employee	New	3.48	10	\$1.08	9%	38%	\$46.53	1.83	1.83	PUMP_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Fan System - Equipment Upgrade	employee	New	15.89	10	\$1.60	9%	38%	\$48.38	6.58	6.58	FAN_EQPTF-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Flow Optimization	employee	New	18.78	10	\$2.64	9%	38%	\$17.76	9.87	9.87	FAN_FLOWOPT-Motors-UN-v1.0-5
Agriculture	Motors	Fan System - Variable Speed Drive	employee	New	28.90	10	\$13.33	9%	38%	\$69.11	15.18	15.18	FAN_VSD-Motors-UN-v1.0-5

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Agriculture	Motors	Compressed Air - Equipment Upgrade	employee	New	10.74	10	\$0.81	17%	50%	\$39.01	5.18	5.18	CMPAIR_EQPT-Motors-7PLN-v5-2
Agriculture	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	0.66	0.66	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.03	0.03	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	12.27	10	\$1.33	9%	15%	\$16.21	1.36	1.36	E3T
Agriculture	Motors	Compressed Air - System Controls	employee	New	2.45	10	\$0.58	9%	38%	\$2.98	1.29	1.29	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Leak Management Program	employee	New	6.14	10	\$0.58	18%	75%	\$41.91	5.08	5.08	CMPAIR_LEAK-Motors-7PLN-v5-1
Agriculture	Motors	Compressed Air - Variable Speed Drive	employee	New	4.60	15	\$3.54	26%	45%	\$93.77	2.15	2.15	CMPAIR_VSD-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.15	10	\$0.05	17%	50%	\$53.10	0.07	0.07	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Agriculture	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	0.92	10	\$0.18	17%	50%	\$28.82	0.44	0.44	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	2.15	2.15	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Agriculture	Motors	Compressed Air - Receiver Capacity Addition	employee	New	0.92	15	\$0.49	17%	50%	\$64.46	0.64	0.64	CMPAIR_STORAGE-Motors-UN-v1.0-3
Agriculture	Motors	Compressed Air - End Use Optimization	employee	New	8.59	6	\$1.33	26%	45%	\$32.53	2.09	2.09	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Agriculture	Motors	Material Handling - Variable Speed Drive	employee	New	33.25	10	\$11.70	25%	45%	\$52.72	12.26	12.26	MATHAND_VSD-Material Handling-7PLN-v5-2
Agriculture	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.85	10	\$0.36	10%	50%	\$63.27	2.49	2.49	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Agriculture	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.47	10	\$0.13	6%	25%	\$40.42	0.66	0.66	MTR_GRWND>100HP-Motors-7PLN-v5-25
Agriculture	Motors	Switch from Belt Drive to Direct Drive	employee	New	7.05	12	\$1.57	16%	25%	\$30.51	5.56	5.56	2015-mdu-irp-report--volume-iii.pdf
Agriculture	Motors	Motors - Synchronous Belts	employee	New	1.88	10	\$0.47	16%	36%	\$37.60	2.18	2.18	DRV_SYNBELT-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Engine Block Heater Controls	Unit	New	1,830.26	10	\$227.62	8%	17%	\$18.63	22.24	22.24	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Circulating Engine Block Heater	unit	New	2,678.00	15	\$615.23	8%	17%	\$28.00	45.02	45.02	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Agriculture	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	268.67	10	\$604.92	15%	17%	\$337.34	0.50	0.50	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Agriculture	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	865.72	1	\$54.66	15%	17%	\$61.31	3.48	3.48	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Agriculture	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	335.61	2	\$14.74	15%	17%	\$22.56	0.16	0.16	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Agriculture	Process	Dairy - Milk Precoolers	employee	New	52.09	15	\$24.91	15%	15%	\$58.29	0.51	0.51	HE_WATERER-Agricultural-OPATRM-v1-1
Agriculture	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.17	15	\$0.67	15%	30%	\$15.81	1.04	1.04	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Agriculture	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	4.89	15	\$0.63	8%	16%	\$15.74	0.34	0.34	PUMP_VSD-Motors-7PLN-v2-2
Agriculture	Motors	Automatic Milker Takeoffs	Cows	New	7.50	10	\$75.00	15%	15%	\$1,498.31	0.39	0.39	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Agriculture	Process	Clean Room: Change Filter Strategy	employee	New	0.80	15	\$0.01	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Agriculture	Process	Clean Room: Chiller Optimize	employee	New	15.44	15	\$1.48	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Agriculture	Process	Clean Room: Clean Room HVAC	employee	New	9.38	15	\$1.78	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Solidstate Chiller	employee	New	9.38	15	\$5.59	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.10	15	\$0.02	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.20	15	\$0.11	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Agriculture	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.20	15	\$0.00	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Agriculture	Motors	Panel: Hydraulic Press	employee	New	49.72	10	\$11.69	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Agriculture	Motors	Wood: Replace Pneumatic Conveyor	employee	New	51.49	10	\$0.88	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Agriculture	Process	Metal: New Arc Furnace	employee	New	27.86	10	\$3.02	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Agriculture	Process	Paper: Premium Control Large Material	employee	New	10.49	10	\$5.41	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Agriculture	Process	Paper: Efficient Pulp Screen	employee	New	8.40	10	\$1.78	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Agriculture	Process	Kraft: Effluent Treatment System	employee	New	8.40	10	\$0.73	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Agriculture	Motors	Kraft: Efficient Agitator	employee	New	88.78	10	\$8.73	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Agriculture	Process	Mech Pulp: Premium Process	employee	New	0.09	5	\$0.01	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Agriculture	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.79	1	\$0.03	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Agriculture	Cooling	Transformer - High Efficiency	employee	New	2.83	10	\$2.32	15%	15%	\$17.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Agriculture	Heating	Transformer - High Efficiency	employee	New	5.73	10	\$2.32	15%	15%	\$17.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Ventilation	Transformer - High Efficiency	employee	New	0.21	10	\$2.32	15%	15%	\$17.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Interior Lighting	Transformer - High Efficiency	employee	New	0.59	10	\$2.32	15%	15%	\$17.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Exterior Lighting	Transformer - High Efficiency	employee	New	0.15	10	\$2.32	15%	15%	\$17.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Motors	Transformer - High Efficiency	employee	New	5.64	10	\$2.32	15%	15%	\$17.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Process	Transformer - High Efficiency	employee	New	4.20	10	\$2.32	15%	15%	\$17.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Miscellaneous	Transformer - High Efficiency	employee	New	0.68	10	\$2.32	15%	15%	\$17.20	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Agriculture	Cooling	Strategic Energy Management	employee	New	8.18	3	\$4.66	3%	11%	\$28.90	0.01	0.01	IND_SEM-HVAC-AEG-1
Agriculture	Heating	Strategic Energy Management	employee	New	16.57	3	\$4.66	3%	11%	\$28.90	0.01	0.01	IND_SEM-HVAC-AEG-1
Agriculture	Ventilation	Strategic Energy Management	employee	New	0.60	3	\$4.66	3%	11%	\$28.90	0.00	0.00	IND_SEM-HVAC-AEG-1
Agriculture	Interior Lighting	Strategic Energy Management	employee	New	1.70	3	\$4.66	3%	11%	\$28.90	0.01	0.01	IND_SEM-Lighting-AEG-1
Agriculture	Exterior Lighting	Strategic Energy Management	employee	New	0.44	3	\$4.66	3%	11%	\$28.90	0.00	0.00	IND_SEM-Lighting-AEG-1
Agriculture	Motors	Strategic Energy Management	employee	New	16.29	3	\$4.66	3%	11%	\$28.90	0.13	0.13	IND_SEM-Motors-AEG-1
Agriculture	Process	Strategic Energy Management	employee	New	12.13	3	\$4.66	3%	11%	\$28.90	0.09	0.09	IND_SEM-Process-AEG-1
Agriculture	Miscellaneous	Strategic Energy Management	employee	New	1.97	3	\$4.66	3%	11%	\$28.90	0.02	0.02	IND_SEM-Process-AEG-1
Agriculture	Interior Lighting	Commissioning	employee	New	1.96	3	\$17.00	5%	39%	\$161.32	0.44	0.44	IND_SEM-HVAC-AEG-1

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Agriculture	Exterior Lighting	Commissioning	employee	New	0.50	3	\$17.00	5%	39%	\$161.32	0.11	0.11	IND_SEM-HVAC-AEG-1
Agriculture	Motors	Commissioning	employee	New	18.80	3	\$17.00	5%	39%	\$161.32	5.78	5.78	IND_SEM-HVAC-AEG-1
Agriculture	Process	Commissioning	employee	New	14.00	3	\$17.00	5%	39%	\$161.32	5.38	5.38	IND_SEM-Lighting-AEG-1
Agriculture	Miscellaneous	Commissioning	employee	New	2.27	3	\$17.00	5%	39%	\$161.32	0.53	0.44	IND_SEM-Lighting-AEG-1
Agriculture	Interior Lighting	Retrocommissioning	employee	New	1.96	3	\$10.79	0%	0%	\$102.41	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Exterior Lighting	Retrocommissioning	employee	New	0.50	3	\$10.79	0%	0%	\$102.41	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Motors	Retrocommissioning	employee	New	18.80	3	\$10.79	0%	0%	\$102.41	0.00	0.00	IND_RCX-Motors-AEG-1
Agriculture	Process	Retrocommissioning	employee	New	14.00	3	\$10.79	0%	0%	\$102.41	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Miscellaneous	Retrocommissioning	employee	New	2.27	3	\$10.79	0%	0%	\$102.41	0.00	0.00	IND_RCX-Process-AEG-1
Agriculture	Motors	Municipal Sewage Treatment - Optimization	employee	New	0.63	12	\$0.34	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Agriculture	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Agriculture	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	10.44	11	\$8.13	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Agriculture	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Agriculture	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Agriculture	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Agriculture	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	426.30	433.51	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	311.85	312.91	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	188.12	189.82	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	166.22	169.03	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	13.19	13.23	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	7.96	8.03	Building Energy Simulation Tool
Mining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	3.27	3.32	Building Energy Simulation Tool
Mining	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	207.90	208.61	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	125.41	126.55	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	53.60	54.51	Building Energy Simulation Tool

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Mining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	29.29	29.39	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	17.67	17.83	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	136.43	138.83	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	1,136.90	1,156.86	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	552.01	561.70	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	102.35	104.89	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	458.93	470.28	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	Existing	1.72	5	\$0.40	18%	30%	\$57.08	491.18	503.75	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	63.89	64.79	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	1,987.31	2,035.54	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	2,815.78	2,830.72	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	140.02	144.20	RTU_MNT-Cooling-PGE-R2-1
Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	790.38	803.76	STAT_WIFI-AII-7PLN-v2-1
Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	578.19	580.16	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	348.78	351.94	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	1.29	15	\$0.36	7%	33%	\$37.34	5,755.83	6,127.74	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	1.80	15	\$0.60	7%	33%	\$44.01	8,058.16	8,578.83	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	27.37	29.80	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	1,063.87	1,084.95	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	1,089.38	1,110.97	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	1,281.81	1,334.55	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	1,869.28	1,946.20	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	1,277.83	1,330.41	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	11,112.22	20	\$3,820.43	15%	20%	\$36.88	1,386.73	1,386.73	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Mining	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$169.51	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Mining	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$118.64	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	Existing	15,429.75	10	\$2,262.33	9%	38%	\$55.29	75,097.96	75,097.96	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	Existing	11,572.31	12	\$3,447.80	9%	38%	(\$25.77)	55,384.36	55,384.36	PUMP_SYSOPT-Motors-UN-v1.0-5

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Motors	Pumping System - Variable Speed Drive	employee	Existing	11,572.31	10	\$3,593.63	9%	38%	\$46.53	55,384.36	55,384.36	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	Existing	2,357.32	10	\$237.01	9%	38%	\$48.38	11,473.30	11,473.30	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	Existing	2,785.93	10	\$392.14	9%	38%	\$17.76	13,333.27	13,333.27	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	Existing	4,286.04	10	\$1,976.87	9%	38%	\$69.11	20,512.73	20,512.73	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	11,250.86	10	\$844.60	17%	50%	\$39.01	63,885.42	63,885.42	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	4,729.34	4,729.34	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	317.13	317.13	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	12,858.12	10	\$1,391.08	9%	15%	\$16.21	12,955.41	12,955.41	E3T
Mining	Motors	Compressed Air - System Controls	employee	Existing	2,571.62	10	\$603.89	9%	38%	\$2.98	12,307.64	12,307.64	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	Existing	6,429.06	10	\$607.06	18%	75%	\$41.91	62,581.64	62,581.64	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	4,821.80	15	\$3,709.27	26%	45%	\$93.77	15,384.54	15,384.54	CMPAIR_VSD-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	160.73	10	\$56.96	17%	50%	\$53.10	912.65	912.65	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	964.36	10	\$185.46	17%	50%	\$28.82	5,475.89	5,475.89	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	15,499.41	15,499.41	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	964.36	15	\$510.03	17%	50%	\$64.46	5,475.89	5,475.89	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Mining	Motors	Compressed Air - End Use Optimization	employee	Existing	9,000.68	6	\$1,392.77	26%	45%	\$32.53	28,717.82	28,717.82	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	Existing	4,213.97	10	\$1,482.86	25%	45%	\$52.72	14,152.84	14,152.84	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	385.74	10	\$162.89	10%	50%	\$63.27	12,955.41	12,955.41	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	214.30	10	\$57.82	6%	25%	\$40.42	3,418.79	3,418.79	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	3,214.53	12	\$715.01	16%	25%	\$30.51	25,640.91	25,640.91	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	Existing	857.21	10	\$215.10	16%	36%	\$37.60	14,602.38	14,602.38	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	50,429.79	10	\$6,271.80	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	73,787.91	15	\$16,951.70	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	446,825.31	10	\$604.92	0%	0%	\$0.20	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	23,853.55	1	\$54.66	0%	0%	\$2.23	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	9,247.08	2	\$14.74	0%	0%	\$0.82	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Mining	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$539.39	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	750.96	15	\$97.00	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Mining	Motors	Automatic Milker Takeoffs	Cows	Existing	24,946.08	10	\$249,460.82	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	Existing	902.32	15	\$6.87	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$31.94	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$38.55	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$121.10	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	112.79	15	\$24.70	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	225.58	15	\$119.15	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	225.58	15	\$2.39	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	Existing	6,300.48	10	\$1,481.97	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	6,525.50	10	\$110.99	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Mining	Process	Metal: New Arc Furnace	employee	Existing	1,015.11	10	\$109.93	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Mining	Process	Paper: Premium Control Large Material	employee	Existing	1,056.13	10	\$545.08	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	Existing	845.93	10	\$179.55	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	Existing	845.93	10	\$73.61	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Mining	Motors	Kraft: Efficient Agitator	employee	Existing	11,250.86	10	\$1,105.89	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	Existing	9.47	5	\$1.26	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	100.43	1	\$4.22	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	Existing	299.93	10	\$538.76	15%	15%	\$17.52	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	Existing	639.66	10	\$538.76	15%	15%	\$17.52	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	Existing	24.26	10	\$538.76	15%	15%	\$17.52	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	Existing	118.94	10	\$538.76	15%	15%	\$17.52	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	27.71	10	\$538.76	15%	15%	\$17.52	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	Existing	3,214.53	10	\$538.76	15%	15%	\$17.52	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	Existing	253.78	10	\$538.76	15%	15%	\$17.52	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	Existing	38.21	10	\$538.76	15%	15%	\$17.52	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	Existing	866.45	3	\$1,081.26	3%	11%	\$29.44	48.10	48.92	IND_SEM-HVAC-AEG-1
Mining	Heating	Strategic Energy Management	employee	Existing	1,847.92	3	\$1,081.26	3%	11%	\$29.44	36.57	36.70	IND_SEM-HVAC-AEG-1
Mining	Ventilation	Strategic Energy Management	employee	Existing	70.07	3	\$1,081.26	3%	11%	\$29.44	21.92	22.12	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	Existing	343.60	3	\$1,081.26	3%	11%	\$29.44	94.04	98.92	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	Existing	80.05	3	\$1,081.26	3%	11%	\$29.44	23.81	24.45	IND_SEM-Lighting-AEG-1

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Mining	Motors	Strategic Energy Management	employee	Existing	9,286.41	3	\$1,081.26	3%	11%	\$29.44	2,985.86	2,985.86	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	Existing	733.14	3	\$1,081.26	3%	11%	\$29.44	235.73	235.73	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	Existing	110.38	3	\$1,081.26	3%	11%	\$29.44	61.20	49.99	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	Existing	396.47	3	\$5,740.06	0%	0%	\$170.76	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	Existing	92.36	3	\$5,740.06	0%	0%	\$170.76	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	Existing	10,715.10	3	\$5,740.06	0%	0%	\$170.76	0.00	0.00	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	Existing	845.93	3	\$5,740.06	0%	0%	\$170.76	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	Existing	127.36	3	\$5,740.06	0%	0%	\$170.76	0.00	0.00	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	Existing	396.47	3	\$3,643.90	10%	40%	\$108.40	1,627.58	1,712.14	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	Existing	92.36	3	\$3,643.90	10%	40%	\$108.40	412.04	423.19	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	Existing	10,715.10	3	\$3,643.90	10%	40%	\$108.40	51,678.42	51,678.42	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	Existing	845.93	3	\$3,643.90	10%	40%	\$108.40	4,079.88	4,079.88	IND_RCX-Process-AEG-1
Mining	Miscellaneous	Retrocommissioning	employee	Existing	127.36	3	\$3,643.90	10%	40%	\$108.40	1,059.29	865.27	IND_RCX-Process-AEG-1
Mining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	2,084.55	12	\$1,137.32	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1

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Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	34,716.93	11	\$27,051.93	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Mining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	Existing	932.48	20	\$1,386.14	0%	3%	\$140.92	1,729.84	1,729.84	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	Existing	122.69	20	\$1,386.14	0%	3%	\$140.92	136.57	136.57	WHP Analysis
Mining	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	185.60	185.83	Building Energy Simulation Tool
Mining	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	126.46	126.46	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	74.14	74.14	Building Energy Simulation Tool
Mining	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	72.37	72.46	Building Energy Simulation Tool
Mining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	5.35	5.35	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	3.14	3.14	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	1.42	1.42	Building Energy Simulation Tool
Mining	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	84.31	84.31	Building Energy Simulation Tool
Mining	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	49.43	49.43	Building Energy Simulation Tool
Mining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	22.96	22.98	Building Energy Simulation Tool
Mining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	11.68	11.68	Building Energy Simulation Tool
Mining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	6.85	6.85	Building Energy Simulation Tool
Mining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	23.36	23.36	AEG-BEST
Mining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	279.67	279.67	AEG-BEST
Mining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	135.79	135.79	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Mining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	25.54	25.54	CHLR_VSPMP-Cooling-SCE-17_R0-86
Mining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	79.70	79.70	AEG-BEST
Mining	Cooling	HVAC - Economizer	sqft	New	1.83	5	\$0.40	18%	30%	\$53.08	43.37	43.61	AEG-BEST
Mining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	14.94	14.94	VENT_DCV-Ventilation-7PLN-v5-5
Mining	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	518.50	519.83	HVLS-Cooling-AEG-1
Mining	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	684.27	684.27	HVLS-Heating-AEG-1
Mining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	6.28	6.35	RTU_MNT-Cooling-PGE-R2-1

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Mining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	148.20	148.48	STAT_WIFI-AII-7PLN-v2-1
Mining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	100.98	100.98	STAT_WIFI-AII-7PLN-v2-1
Mining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	59.20	59.20	STAT_WIFI-AII-7PLN-v2-1
Mining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	1.09	15	\$0.36	22%	41%	\$40.72	2,358.56	2,370.39	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	1.52	15	\$0.60	22%	41%	\$47.99	3,301.98	3,318.55	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Mining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	5.87	5.92	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Mining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Mining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Mining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	191.53	193.36	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Mining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	271.29	273.45	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Mining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	187.89	190.84	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Mining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	144.08	146.43	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Mining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	146.08	148.55	CLTG_EXT_PV-Exterior Lighting-AEG-2
Mining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	11,112.22	20	\$3,820.43	15%	20%	\$36.88	431.98	431.98	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Mining	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$169.51	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Mining	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$118.64	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Mining	Motors	Pumping System - Equipment Upgrade	employee	New	15,429.75	10	\$2,262.33	9%	38%	\$55.29	12,339.15	12,339.15	PUMP_EQPT-Motors-7PLN-v5-1
Mining	Motors	Pumping System - System Optimization	employee	New	11,572.31	12	\$3,447.80	9%	38%	(\$25.77)	13,235.63	13,235.63	PUMP_SYSOPT-Motors-UN-v1.0-5
Mining	Motors	Pumping System - Variable Speed Drive	employee	New	11,572.31	10	\$3,593.63	9%	38%	\$46.53	11,747.42	11,747.42	PUMP_VSD-Motors-UN-v1.0-3
Mining	Motors	Fan System - Equipment Upgrade	employee	New	2,357.32	10	\$237.01	9%	38%	\$48.38	1,885.15	1,885.15	FAN_EQPTF-Motors-UN-v1.0-5
Mining	Motors	Fan System - Flow Optimization	employee	New	2,785.93	10	\$392.14	9%	38%	\$17.76	2,828.08	2,828.08	FAN_FLOWOPT-Motors-UN-v1.0-5
Mining	Motors	Fan System - Variable Speed Drive	employee	New	4,286.04	10	\$1,976.87	9%	38%	\$69.11	4,350.89	4,350.89	FAN_VSD-Motors-UN-v1.0-5
Mining	Motors	Compressed Air - Equipment Upgrade	employee	New	11,250.86	10	\$844.60	17%	50%	\$39.01	10,496.84	10,496.84	CMPAIR_EQPT-Motors-7PLN-v5-2
Mining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	1,335.70	1,335.70	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	52.11	52.11	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	12,858.12	10	\$1,391.08	9%	15%	\$16.21	2,747.93	2,747.93	E3T
Mining	Motors	Compressed Air - System Controls	employee	New	2,571.62	10	\$603.89	9%	38%	\$2.98	2,610.54	2,610.54	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Leak Management Program	employee	New	6,429.06	10	\$607.06	18%	75%	\$41.91	10,282.62	10,282.62	CMPAIR_LEAK-Motors-7PLN-v5-1
Mining	Motors	Compressed Air - Variable Speed Drive	employee	New	4,821.80	15	\$3,709.27	26%	45%	\$93.77	4,345.04	4,345.04	CMPAIR_VSD-Motors-UN-v1.0-3

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Mining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	160.73	10	\$56.96	17%	50%	\$53.10	149.95	149.95	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Mining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	964.36	10	\$185.46	17%	50%	\$28.82	899.73	899.73	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	4,358.73	4,358.73	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Mining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	964.36	15	\$510.03	17%	50%	\$64.46	1,292.75	1,292.75	CMPAIR_STORAGE-Motors-UN-v1.0-3
Mining	Motors	Compressed Air - End Use Optimization	employee	New	9,000.68	6	\$1,392.77	26%	45%	\$32.53	4,222.74	4,222.74	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Mining	Motors	Material Handling - Variable Speed Drive	employee	New	4,213.97	10	\$1,482.86	25%	45%	\$52.72	3,001.92	3,001.92	MATHAND_VSD-Material Handling-7PLN-v5-2
Mining	Motors	Motors - Green Rewind (<100 HP)	employee	New	385.74	10	\$162.89	10%	50%	\$63.27	2,747.93	2,747.93	MTR_GRWND<100HP-Motors-7PLN-v5-17
Mining	Motors	Motors - Green Rewind (100 HP+)	employee	New	214.30	10	\$57.82	6%	25%	\$40.42	725.15	725.15	MTR_GRWND>100HP-Motors-7PLN-v5-25
Mining	Motors	Switch from Belt Drive to Direct Drive	employee	New	3,214.53	12	\$715.01	16%	25%	\$30.51	6,127.61	6,127.61	2015-mdu-irp-report--volume-iii.pdf
Mining	Motors	Motors - Synchronous Belts	employee	New	857.21	10	\$215.10	16%	36%	\$37.60	2,399.28	2,399.28	DRV_SYNBELT-Motors-7PLN-v5-1
Mining	Miscellaneous	Engine Block Heater Controls	Unit	New	50,429.79	10	\$6,271.80	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Mining	Miscellaneous	Circulating Engine Block Heater	unit	New	73,787.91	15	\$16,951.70	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Mining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	446,825.31	10	\$604.92	0%	0%	\$0.20	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Mining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	23,853.55	1	\$54.66	0%	0%	\$2.23	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Mining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	9,247.08	2	\$14.74	0%	0%	\$0.82	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Mining	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$539.39	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Mining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Mining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	750.96	15	\$97.00	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Mining	Motors	Automatic Milker Takeoffs	Cows	New	24,946.08	10	\$249,460.82	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Mining	Process	Clean Room: Change Filter Strategy	employee	New	902.32	15	\$6.87	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$31.94	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Mining	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$38.55	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Mining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$121.10	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	112.79	15	\$24.70	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Mining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	225.58	15	\$119.15	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Mining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	225.58	15	\$2.39	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Mining	Motors	Panel: Hydraulic Press	employee	New	6,300.48	10	\$1,481.97	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Mining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	6,525.50	10	\$110.99	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1

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Mining	Process	Metal: New Arc Furnace	employee	New	1,015.11	10	\$109.93	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Mining	Process	Paper: Premium Control Large Material	employee	New	1,056.13	10	\$545.08	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Mining	Process	Paper: Efficient Pulp Screen	employee	New	845.93	10	\$179.55	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Mining	Process	Kraft: Effluent Treatment System	employee	New	845.93	10	\$73.61	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Mining	Motors	Kraft: Efficient Agitator	employee	New	11,250.86	10	\$1,105.89	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Mining	Process	Mech Pulp: Premium Process	employee	New	9.47	5	\$1.26	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Mining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	100.43	1	\$4.22	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Mining	Cooling	Transformer - High Efficiency	employee	New	319.57	10	\$538.76	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Heating	Transformer - High Efficiency	employee	New	647.19	10	\$538.76	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Ventilation	Transformer - High Efficiency	employee	New	23.46	10	\$538.76	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Interior Lighting	Transformer - High Efficiency	employee	New	101.02	10	\$538.76	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Exterior Lighting	Transformer - High Efficiency	employee	New	25.89	10	\$538.76	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Motors	Transformer - High Efficiency	employee	New	3,214.53	10	\$538.76	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Process	Transformer - High Efficiency	employee	New	253.78	10	\$538.76	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Miscellaneous	Transformer - High Efficiency	employee	New	37.55	10	\$538.76	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Mining	Cooling	Strategic Energy Management	employee	New	923.21	3	\$1,081.26	3%	11%	\$29.29	2.44	2.45	IND_SEM-HVAC-AEG-1

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Mining	Heating	Strategic Energy Management	employee	New	1,869.65	3	\$1,081.26	3%	11%	\$29.29	1.73	1.73	IND_SEM-HVAC-AEG-1
Mining	Ventilation	Strategic Energy Management	employee	New	67.78	3	\$1,081.26	3%	11%	\$29.29	1.01	1.01	IND_SEM-HVAC-AEG-1
Mining	Interior Lighting	Strategic Energy Management	employee	New	291.85	3	\$1,081.26	3%	11%	\$29.29	4.21	4.26	IND_SEM-Lighting-AEG-1
Mining	Exterior Lighting	Strategic Energy Management	employee	New	74.80	3	\$1,081.26	3%	11%	\$29.29	1.09	1.10	IND_SEM-Lighting-AEG-1
Mining	Motors	Strategic Energy Management	employee	New	9,286.41	3	\$1,081.26	3%	11%	\$29.29	137.88	137.88	IND_SEM-Motors-AEG-1
Mining	Process	Strategic Energy Management	employee	New	733.14	3	\$1,081.26	3%	11%	\$29.29	10.88	10.88	IND_SEM-Process-AEG-1
Mining	Miscellaneous	Strategic Energy Management	employee	New	108.47	3	\$1,081.26	3%	11%	\$29.29	2.62	1.92	IND_SEM-Process-AEG-1
Mining	Interior Lighting	Commissioning	employee	New	336.75	3	\$5,740.06	10%	40%	\$171.33	128.71	129.75	IND_SEM-HVAC-AEG-1
Mining	Exterior Lighting	Commissioning	employee	New	86.30	3	\$5,740.06	10%	40%	\$171.33	33.17	33.56	IND_SEM-HVAC-AEG-1
Mining	Motors	Commissioning	employee	New	10,715.10	3	\$5,740.06	10%	40%	\$171.33	7,023.91	7,023.91	IND_SEM-HVAC-AEG-1
Mining	Process	Commissioning	employee	New	845.93	3	\$5,740.06	10%	40%	\$171.33	332.71	332.71	IND_SEM-Lighting-AEG-1
Mining	Miscellaneous	Commissioning	employee	New	125.16	3	\$5,740.06	10%	40%	\$171.33	49.57	41.15	IND_SEM-Lighting-AEG-1
Mining	Interior Lighting	Retrocommissioning	employee	New	336.75	3	\$3,643.90	0%	0%	\$108.76	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Exterior Lighting	Retrocommissioning	employee	New	86.30	3	\$3,643.90	0%	0%	\$108.76	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Motors	Retrocommissioning	employee	New	10,715.10	3	\$3,643.90	0%	0%	\$108.76	0.00	0.00	IND_RCX-Motors-AEG-1
Mining	Process	Retrocommissioning	employee	New	845.93	3	\$3,643.90	0%	0%	\$108.76	0.00	0.00	IND_RCX-Process-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Mining	Miscellaneous	Retrocommissioning	employee	New	125.16	3	\$3,643.90	0%	0%	\$108.76	0.00	0.00	IND_RCX-Process-AEG-1
Mining	Motors	Municipal Sewage Treatment - Optimization	employee	New	2,084.55	12	\$1,137.32	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Mining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Mining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	34,716.93	11	\$27,051.93	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Mining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Mining	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Mining	Motors	WHP - Conveyor Regen	employee	New	932.48	20	\$1,386.14	0%	3%	\$140.92	486.46	486.46	WHP Analysis
Mining	Process	WHP - Conveyor Regen	employee	New	122.69	20	\$1,386.14	0%	3%	\$140.92	38.40	38.40	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	1.49	1.51	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	1.09	1.09	Building Energy Simulation Tool

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Food Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	0.66	0.66	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	0.58	0.59	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.05	0.05	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.03	0.03	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.01	0.01	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	0.72	0.73	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	0.44	0.44	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	0.19	0.19	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.10	0.10	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.06	0.06	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	0.48	0.48	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	3.96	4.03	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	1.92	1.96	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	0.36	0.37	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	1.60	1.64	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.09	5	\$0.40	18%	30%	\$1,139.85	1.71	1.76	AEG-BEST

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Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	0.22	0.23	VENT_DCV-Ventilation-7PLN-v5-5
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	6.93	7.10	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	9.82	9.87	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	0.49	0.50	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	2.76	2.80	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	2.02	2.02	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	1.22	1.23	STAT_WIFI-All-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.06	15	\$0.36	7%	33%	\$745.71	32.53	34.63	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.09	15	\$0.60	7%	33%	\$878.87	45.54	48.49	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.15	0.17	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	6.02	6.13	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	6.16	6.28	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	7.25	7.55	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	10.57	11.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	7.23	7.52	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	3,359.31	20	\$1,154.95	15%	20%	\$36.88	13.40	13.40	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	79.92	15	\$80.08	20%	50%	\$122.12	25.96	25.96	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	Existing	127.88	15	\$56.04	20%	50%	\$53.42	41.53	41.53	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	373.94	10	\$54.83	9%	38%	\$55.29	116.34	116.34	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	Existing	280.46	12	\$83.56	9%	38%	(\$25.77)	85.80	85.80	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	280.46	10	\$87.09	9%	38%	\$46.53	85.80	85.80	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	341.95	10	\$34.38	9%	38%	\$48.38	106.39	106.39	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	Existing	404.13	10	\$56.88	9%	38%	\$17.76	123.63	123.63	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	621.73	10	\$286.76	9%	38%	\$69.11	190.21	190.21	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	418.46	10	\$31.41	17%	50%	\$39.01	151.89	151.89	CMPAIR_EQPT-Motors-7PLN-v5-2
Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	11.24	11.24	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.75	0.75	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

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Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	478.24	10	\$51.74	9%	15%	\$16.21	30.80	30.80	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	Existing	95.65	10	\$22.46	9%	38%	\$2.98	29.26	29.26	CMPAIR_SYSCtrl-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	239.12	10	\$22.58	18%	75%	\$41.91	148.79	148.79	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	179.34	15	\$137.96	26%	45%	\$93.77	36.58	36.58	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	5.98	10	\$2.12	17%	50%	\$53.10	2.17	2.17	CMPAIR_LPDPFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	35.87	10	\$6.90	17%	50%	\$28.82	13.02	13.02	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	36.85	36.85	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	35.87	15	\$18.97	17%	50%	\$64.46	13.02	13.02	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	334.77	6	\$51.80	26%	45%	\$32.53	68.28	68.28	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,098.27	10	\$386.47	25%	45%	\$52.72	235.79	235.79	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	22.75	10	\$9.61	10%	50%	\$63.27	48.84	48.84	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	12.64	10	\$3.41	6%	25%	\$40.42	12.89	12.89	MTR_GRWND>100HP-Motors-7PLN-v5-25
Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	189.58	12	\$42.17	16%	25%	\$30.51	96.66	96.66	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	Existing	50.55	10	\$12.69	16%	36%	\$37.60	55.05	55.05	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	15,245.31	10	\$1,896.01	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	22,306.65	15	\$5,124.63	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	21,657.82	10	\$604.92	0%	0%	\$4.18	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	7,211.11	1	\$54.66	0%	0%	\$7.36	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,795.46	2	\$14.74	0%	0%	\$2.71	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	Existing	532.82	15	\$254.81	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	4.21	15	\$0.55	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	38.53	15	\$4.98	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	604.57	10	\$6,045.74	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	16.83	15	\$0.13	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	157.96	15	\$15.09	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	95.91	15	\$18.21	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	95.91	15	\$57.21	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.10	15	\$0.46	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	4.21	15	\$2.22	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	4.21	15	\$0.04	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,642.07	10	\$386.24	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,700.71	10	\$28.93	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	Existing	352.64	10	\$38.19	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	Existing	116.88	10	\$60.32	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	93.61	10	\$19.87	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	93.61	10	\$8.15	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	2,932.26	10	\$288.22	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.05	5	\$0.14	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	26.17	1	\$1.10	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	Existing	16.36	10	\$35.87	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	Existing	34.89	10	\$35.87	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.32	10	\$35.87	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	10.52	10	\$35.87	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.45	10	\$35.87	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Motors	Transformer - High Efficiency	employee	Existing	189.58	10	\$35.87	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	Existing	46.81	10	\$35.87	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	5.78	10	\$35.87	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	Existing	47.26	3	\$71.99	3%	11%	\$29.31	1.26	1.28	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	Existing	100.79	3	\$71.99	3%	11%	\$29.31	0.96	0.96	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	Existing	3.82	3	\$71.99	3%	11%	\$29.31	0.57	0.58	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	30.39	3	\$71.99	3%	11%	\$29.31	3.99	4.20	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	7.08	3	\$71.99	3%	11%	\$29.31	1.01	1.04	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	Existing	547.66	3	\$71.99	3%	11%	\$29.31	84.42	84.42	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	Existing	135.22	3	\$71.99	3%	11%	\$29.31	20.84	20.84	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	16.68	3	\$71.99	3%	11%	\$29.31	4.44	3.62	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	Existing	35.07	3	\$396.12	0%	0%	\$168.14	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	Existing	8.17	3	\$396.12	0%	0%	\$168.14	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	Existing	631.92	3	\$396.12	0%	0%	\$168.14	0.00	0.00	IND_SEM-HVAC-AEG-1
Food Mfg	Process	Commissioning	employee	Existing	156.02	3	\$396.12	0%	0%	\$168.14	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	Existing	19.25	3	\$396.12	0%	0%	\$168.14	0.00	0.00	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	Existing	35.07	3	\$251.46	10%	37%	\$106.74	8.28	8.71	IND_RCX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	8.17	3	\$251.46	10%	37%	\$106.74	2.10	2.15	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	Existing	631.92	3	\$251.46	10%	37%	\$106.74	175.34	175.34	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	Existing	156.02	3	\$251.46	10%	37%	\$106.74	43.29	43.29	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	Existing	19.25	3	\$251.46	10%	37%	\$106.74	9.21	7.52	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	50.52	12	\$27.56	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	841.37	11	\$655.61	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	0.65	0.65	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	0.44	0.44	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	0.26	0.26	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	0.25	0.25	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.02	0.02	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.01	0.01	Building Energy Simulation Tool
Food Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.00	0.00	Building Energy Simulation Tool
Food Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	0.29	0.29	Building Energy Simulation Tool
Food Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.17	0.17	Building Energy Simulation Tool
Food Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.08	0.08	Building Energy Simulation Tool
Food Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.04	0.04	Building Energy Simulation Tool
Food Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.02	0.02	Building Energy Simulation Tool
Food Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.08	0.08	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	0.98	0.98	AEG-BEST
Food Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	0.47	0.47	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.09	0.09	CHLR_VSPMP-Cooling-SCE-17_R0-86
Food Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	0.28	0.28	AEG-BEST
Food Mfg	Cooling	HVAC - Economizer	sqft	New	0.09	5	\$0.40	18%	30%	\$1,059.86	0.15	0.15	AEG-BEST
Food Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.05	0.05	VENT_DCV-Ventilation-7PLN-v5-5
Food Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	1.81	1.81	HVLS-Cooling-AEG-1
Food Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	2.39	2.39	HVLS-Heating-AEG-1
Food Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Food Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	0.52	0.52	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	0.35	0.35	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	0.21	0.21	STAT_WIFI-AII-7PLN-v2-1
Food Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.05	15	\$0.36	22%	41%	\$813.13	13.58	13.64	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.08	15	\$0.60	22%	41%	\$958.33	19.01	19.10	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Food Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.03	0.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Food Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Food Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Food Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	1.08	1.09	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Food Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	1.53	1.55	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	1.06	1.08	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Food Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	0.81	0.83	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Food Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	0.83	0.84	CLTG_EXT_PV-Exterior Lighting-AEG-2
Food Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	3,359.31	20	\$1,154.95	15%	20%	\$36.88	4.17	4.17	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Food Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	79.92	15	\$80.08	20%	50%	\$122.12	6.13	6.13	RFG_FHPC-Refrigeration-RTF-v1.3-23
Food Mfg	Process	Refrigeration - System Optimization	employee	New	127.88	15	\$56.04	20%	50%	\$53.42	9.80	9.80	AEG Research - prior study
Food Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	373.94	10	\$54.83	9%	38%	\$55.29	19.12	19.12	PUMP_EQPT-Motors-7PLN-v5-1
Food Mfg	Motors	Pumping System - System Optimization	employee	New	280.46	12	\$83.56	9%	38%	(\$25.77)	20.50	20.50	PUMP_SYSOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	280.46	10	\$87.09	9%	38%	\$46.53	18.20	18.20	PUMP_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Fan System - Equipment Upgrade	employee	New	341.95	10	\$34.38	9%	38%	\$48.38	17.48	17.48	FAN_EQPTF-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Flow Optimization	employee	New	404.13	10	\$56.88	9%	38%	\$17.76	26.22	26.22	FAN_FLOWOPT-Motors-UN-v1.0-5
Food Mfg	Motors	Fan System - Variable Speed Drive	employee	New	621.73	10	\$286.76	9%	38%	\$69.11	40.34	40.34	FAN_VSD-Motors-UN-v1.0-5
Food Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	418.46	10	\$31.41	17%	50%	\$39.01	24.96	24.96	CMPAIR_EQPT-Motors-7PLN-v5-2

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Food Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	3.18	3.18	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.12	0.12	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	478.24	10	\$51.74	9%	15%	\$16.21	6.53	6.53	E3T
Food Mfg	Motors	Compressed Air - System Controls	employee	New	95.65	10	\$22.46	9%	38%	\$2.98	6.21	6.21	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Leak Management Program	employee	New	239.12	10	\$22.58	18%	75%	\$41.91	24.45	24.45	CMPAIR_LEAK-Motors-7PLN-v5-1
Food Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	179.34	15	\$137.96	26%	45%	\$93.77	10.33	10.33	CMPAIR_VSD-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	5.98	10	\$2.12	17%	50%	\$53.10	0.36	0.36	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Food Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	35.87	10	\$6.90	17%	50%	\$28.82	2.14	2.14	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	10.36	10.36	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Food Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	35.87	15	\$18.97	17%	50%	\$64.46	3.07	3.07	CMPAIR_STORAGE-Motors-UN-v1.0-3
Food Mfg	Motors	Compressed Air - End Use Optimization	employee	New	334.77	6	\$51.80	26%	45%	\$32.53	10.04	10.04	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Food Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,098.27	10	\$386.47	25%	45%	\$52.72	50.01	50.01	MATHAND_VSD-Material Handling-7PLN-v5-2
Food Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	22.75	10	\$9.61	10%	50%	\$63.27	10.36	10.36	MTR_GRWND<100HP-Motors-7PLN-v5-17
Food Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	12.64	10	\$3.41	6%	25%	\$40.42	2.73	2.73	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Food Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	189.58	12	\$42.17	16%	25%	\$30.51	23.10	23.10	2015-mdu-irp-report--volume-iii.pdf
Food Mfg	Motors	Motors - Synchronous Belts	employee	New	50.55	10	\$12.69	16%	36%	\$37.60	9.04	9.04	DRV_SYNBELT-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	15,245.31	10	\$1,896.01	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	22,306.65	15	\$5,124.63	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Food Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	21,657.82	10	\$604.92	0%	0%	\$4.18	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Food Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	7,211.11	1	\$54.66	0%	0%	\$7.36	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Food Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	2,795.46	2	\$14.74	0%	0%	\$2.71	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Food Mfg	Process	Dairy - Milk Precoolers	employee	New	532.82	15	\$254.81	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Food Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	4.21	15	\$0.55	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Food Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	38.53	15	\$4.98	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Food Mfg	Motors	Automatic Milker Takeoffs	Cows	New	604.57	10	\$6,045.74	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Food Mfg	Process	Clean Room: Change Filter Strategy	employee	New	16.83	15	\$0.13	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Chiller Optimize	employee	New	157.96	15	\$15.09	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Food Mfg	Process	Clean Room: Clean Room HVAC	employee	New	95.91	15	\$18.21	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Food Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	95.91	15	\$57.21	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.10	15	\$0.46	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	4.21	15	\$2.22	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Food Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	4.21	15	\$0.04	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Food Mfg	Motors	Panel: Hydraulic Press	employee	New	1,642.07	10	\$386.24	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Food Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,700.71	10	\$28.93	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Food Mfg	Process	Metal: New Arc Furnace	employee	New	352.64	10	\$38.19	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Food Mfg	Process	Paper: Premium Control Large Material	employee	New	116.88	10	\$60.32	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Food Mfg	Process	Paper: Efficient Pulp Screen	employee	New	93.61	10	\$19.87	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Food Mfg	Process	Kraft: Effluent Treatment System	employee	New	93.61	10	\$8.15	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Food Mfg	Motors	Kraft: Efficient Agitator	employee	New	2,932.26	10	\$288.22	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Food Mfg	Process	Mech Pulp: Premium Process	employee	New	1.05	5	\$0.14	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Food Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	26.17	1	\$1.10	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Food Mfg	Cooling	Transformer - High Efficiency	employee	New	17.43	10	\$35.87	15%	15%	\$17.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Heating	Transformer - High Efficiency	employee	New	35.30	10	\$35.87	15%	15%	\$17.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Food Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.28	10	\$35.87	15%	15%	\$17.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	8.94	10	\$35.87	15%	15%	\$17.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	2.29	10	\$35.87	15%	15%	\$17.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Motors	Transformer - High Efficiency	employee	New	189.58	10	\$35.87	15%	15%	\$17.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Process	Transformer - High Efficiency	employee	New	46.81	10	\$35.87	15%	15%	\$17.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	5.68	10	\$35.87	15%	15%	\$17.41	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Food Mfg	Cooling	Strategic Energy Management	employee	New	50.35	3	\$71.99	3%	11%	\$29.25	0.06	0.06	IND_SEM-HVAC-AEG-1
Food Mfg	Heating	Strategic Energy Management	employee	New	101.97	3	\$71.99	3%	11%	\$29.25	0.05	0.05	IND_SEM-HVAC-AEG-1
Food Mfg	Ventilation	Strategic Energy Management	employee	New	3.70	3	\$71.99	3%	11%	\$29.25	0.03	0.03	IND_SEM-HVAC-AEG-1
Food Mfg	Interior Lighting	Strategic Energy Management	employee	New	25.82	3	\$71.99	3%	11%	\$29.25	0.18	0.18	IND_SEM-Lighting-AEG-1
Food Mfg	Exterior Lighting	Strategic Energy Management	employee	New	6.62	3	\$71.99	3%	11%	\$29.25	0.05	0.05	IND_SEM-Lighting-AEG-1
Food Mfg	Motors	Strategic Energy Management	employee	New	547.66	3	\$71.99	3%	11%	\$29.25	3.90	3.90	IND_SEM-Motors-AEG-1
Food Mfg	Process	Strategic Energy Management	employee	New	135.22	3	\$71.99	3%	11%	\$29.25	0.96	0.96	IND_SEM-Process-AEG-1
Food Mfg	Miscellaneous	Strategic Energy Management	employee	New	16.40	3	\$71.99	3%	11%	\$29.25	0.19	0.14	IND_SEM-Process-AEG-1
Food Mfg	Interior Lighting	Commissioning	employee	New	29.79	3	\$396.12	10%	37%	\$168.97	0.65	0.66	IND_SEM-HVAC-AEG-1
Food Mfg	Exterior Lighting	Commissioning	employee	New	7.63	3	\$396.12	10%	37%	\$168.97	0.17	0.17	IND_SEM-HVAC-AEG-1
Food Mfg	Motors	Commissioning	employee	New	631.92	3	\$396.12	10%	37%	\$168.97	23.82	23.82	IND_SEM-HVAC-AEG-1

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Food Mfg	Process	Commissioning	employee	New	156.02	3	\$396.12	10%	37%	\$168.97	5.88	5.88	IND_SEM-Lighting-AEG-1
Food Mfg	Miscellaneous	Commissioning	employee	New	18.92	3	\$396.12	10%	37%	\$168.97	0.43	0.36	IND_SEM-Lighting-AEG-1
Food Mfg	Interior Lighting	Retrocommissioning	employee	New	29.79	3	\$251.46	0%	0%	\$107.27	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Exterior Lighting	Retrocommissioning	employee	New	7.63	3	\$251.46	0%	0%	\$107.27	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Motors	Retrocommissioning	employee	New	631.92	3	\$251.46	0%	0%	\$107.27	0.00	0.00	IND_RCX-Motors-AEG-1
Food Mfg	Process	Retrocommissioning	employee	New	156.02	3	\$251.46	0%	0%	\$107.27	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Miscellaneous	Retrocommissioning	employee	New	18.92	3	\$251.46	0%	0%	\$107.27	0.00	0.00	IND_RCX-Process-AEG-1
Food Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	50.52	12	\$27.56	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Food Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Food Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	841.37	11	\$655.61	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Food Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	20%	50%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Food Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Food Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Food Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.00	0.00	Building Energy Simulation Tool

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Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.00	5	\$0.40	18%	30%	\$782,888.24	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	0.00	0.00	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	0.01	0.01	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.00	15	\$0.36	7%	33%	\$512,177.52	0.03	0.03	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.00	15	\$0.60	7%	33%	\$603,637.79	0.04	0.04	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	0.00	0.01	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	0.01	0.01	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	0.01	0.01	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	0.01	0.01	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	0.01	0.01	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	200.86	20	\$69.06	15%	20%	\$36.88	0.01	0.01	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.11	15	\$0.11	20%	50%	\$122.12	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Paper Mfg	Process	Refrigeration - System Optimization	employee	Existing	0.18	15	\$0.08	20%	50%	\$53.42	0.00	0.00	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	10.45	10	\$1.53	9%	38%	\$55.29	0.20	0.20	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	Existing	7.84	12	\$2.33	9%	38%	(\$25.77)	0.15	0.15	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	7.84	10	\$2.43	9%	38%	\$46.53	0.15	0.15	PUMP_VSD-Motors-UN-v1.0-3

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Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	5.55	10	\$0.56	9%	38%	\$48.38	0.11	0.11	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	Existing	6.56	10	\$0.92	9%	38%	\$17.76	0.12	0.12	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	10.10	10	\$4.66	9%	38%	\$69.11	0.19	0.19	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	9.93	10	\$0.75	17%	50%	\$39.01	0.22	0.22	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	0.02	0.02	CMPAIR_HTCMPDESDRY-Motors-MEMD-v.2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v.2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	11.35	10	\$1.23	9%	15%	\$16.21	0.05	0.05	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	Existing	2.27	10	\$0.53	9%	38%	\$2.98	0.04	0.04	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	5.67	10	\$0.54	18%	75%	\$41.91	0.22	0.22	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	4.26	15	\$3.27	26%	45%	\$93.77	0.05	0.05	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.14	10	\$0.05	17%	50%	\$53.10	0.00	0.00	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	0.85	10	\$0.16	17%	50%	\$28.82	0.02	0.02	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	0.05	0.05	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	0.85	15	\$0.45	17%	50%	\$64.46	0.02	0.02	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	7.94	6	\$1.23	26%	45%	\$32.53	0.10	0.10	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	22.55	10	\$7.94	25%	45%	\$52.72	0.30	0.30	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	0.46	10	\$0.19	10%	50%	\$63.27	0.06	0.06	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.25	10	\$0.07	6%	25%	\$40.42	0.02	0.02	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	3.82	12	\$0.85	16%	25%	\$30.51	0.12	0.12	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	Existing	1.02	10	\$0.26	16%	36%	\$37.60	0.07	0.07	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	911.55	10	\$113.37	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	1,333.77	15	\$306.41	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	2,722.77	10	\$604.92	0%	0%	\$33.29	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	431.17	1	\$54.66	0%	0%	\$123.11	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	167.15	2	\$14.74	0%	0%	\$45.30	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Paper Mfg	Process	Dairy - Milk Precoolers	employee	Existing	0.74	15	\$0.35	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	40.34	15	\$5.23	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	775.66	15	\$100.19	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	16.89	10	\$168.90	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	0.99	15	\$0.01	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	0.22	15	\$0.02	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	0.13	15	\$0.03	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.13	15	\$0.08	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.12	15	\$0.03	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.25	15	\$0.13	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.25	15	\$0.00	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	Existing	33.72	10	\$7.93	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	34.92	10	\$0.59	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	Existing	3.37	10	\$0.36	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Paper Mfg	Process	Paper: Premium Control Large Material	employee	Existing	0.64	10	\$0.33	15%	40%	\$77.33	0.05	0.05	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	0.52	10	\$0.11	15%	29%	\$31.80	0.02	0.02	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	0.52	10	\$0.04	15%	25%	\$13.04	0.02	0.02	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Paper Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	60.21	10	\$5.92	15%	29%	\$14.73	0.54	0.54	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.01	5	\$0.00	15%	38%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	0.54	1	\$0.02	15%	52%	\$40.79	0.01	0.01	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	Existing	0.16	10	\$0.57	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	Existing	0.35	10	\$0.57	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	0.01	10	\$0.57	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	0.14	10	\$0.57	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	0.03	10	\$0.57	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	Existing	3.82	10	\$0.57	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	Existing	0.26	10	\$0.57	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	0.08	10	\$0.57	15%	15%	\$17.44	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	Existing	0.47	3	\$1.14	3%	11%	\$29.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	Existing	1.01	3	\$1.14	3%	11%	\$29.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Ventilation	Strategic Energy Management	employee	Existing	0.04	3	\$1.14	3%	11%	\$29.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	0.41	3	\$1.14	3%	11%	\$29.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	0.10	3	\$1.14	3%	11%	\$29.30	0.00	0.00	IND_SEM-Lighting-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Motors	Strategic Energy Management	employee	Existing	11.04	3	\$1.14	3%	11%	\$29.30	0.15	0.15	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	Existing	0.74	3	\$1.14	3%	11%	\$29.30	0.01	0.01	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	0.22	3	\$1.14	3%	11%	\$29.30	0.01	0.00	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	Existing	0.47	3	\$6.75	0%	0%	\$169.06	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	Existing	0.11	3	\$6.75	0%	0%	\$169.06	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	Existing	12.74	3	\$6.75	0%	0%	\$169.06	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	Existing	0.86	3	\$6.75	0%	0%	\$169.06	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	Existing	0.26	3	\$6.75	0%	0%	\$169.06	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	Existing	0.47	3	\$4.29	10%	35%	\$107.32	0.01	0.01	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	0.11	3	\$4.29	10%	35%	\$107.32	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	Existing	12.74	3	\$4.29	10%	35%	\$107.32	0.20	0.20	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	Existing	0.86	3	\$4.29	10%	35%	\$107.32	0.01	0.01	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	Existing	0.26	3	\$4.29	10%	35%	\$107.32	0.01	0.01	IND_RCX-Process-AEG-1
Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	1.41	12	\$0.77	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	23.51	11	\$18.32	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.00	0.00	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.00	0.00	Building Energy Simulation Tool
Paper Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	0.00	0.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Paper Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.00	0.00	CHLR_VSPMP-Cooling-SCE-17_R0-86
Paper Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	0.00	0.00	AEG-BEST
Paper Mfg	Cooling	HVAC - Economizer	sqft	New	0.00	5	\$0.40	18%	30%	\$727,947.31	0.00	0.00	AEG-BEST
Paper Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.00	0.00	VENT_DCV-Ventilation-7PLN-v5-5
Paper Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	0.00	0.00	HVLS-Cooling-AEG-1
Paper Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	0.00	0.00	HVLS-Heating-AEG-1
Paper Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.00	0.00	RTU_MNT-Cooling-PGE-R2-1
Paper Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	0.00	0.00	STAT_WIFI-All-7PLN-v2-1

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Paper Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	0.00	0.00	STAT_WIFI-AII-7PLN-v2-1
Paper Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.00	15	\$0.36	22%	41%	\$558,483.04	0.01	0.01	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.00	15	\$0.60	22%	41%	\$658,212.15	0.02	0.02	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Paper Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.00	0.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Paper Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Paper Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Paper Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	0.00	0.00	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Paper Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	0.00	0.00	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	0.00	0.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Paper Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	0.00	0.00	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Paper Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	0.00	0.00	CLTG_EXT_PV-Exterior Lighting-AEG-2
Paper Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	200.86	20	\$69.06	15%	20%	\$36.88	0.00	0.00	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Paper Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	0.11	15	\$0.11	20%	50%	\$122.12	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Paper Mfg	Process	Refrigeration - System Optimization	employee	New	0.18	15	\$0.08	20%	50%	\$53.42	0.00	0.00	AEG Research - prior study
Paper Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	10.45	10	\$1.53	9%	38%	\$55.29	0.03	0.03	PUMP_EQPT-Motors-7PLN-v5-1
Paper Mfg	Motors	Pumping System - System Optimization	employee	New	7.84	12	\$2.33	9%	38%	(\$25.77)	0.04	0.04	PUMP_SYSOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	7.84	10	\$2.43	9%	38%	\$46.53	0.03	0.03	PUMP_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Fan System - Equipment Upgrade	employee	New	5.55	10	\$0.56	9%	38%	\$48.38	0.02	0.02	FAN_EQPTF-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Flow Optimization	employee	New	6.56	10	\$0.92	9%	38%	\$17.76	0.03	0.03	FAN_FLOWOPT-Motors-UN-v1.0-5
Paper Mfg	Motors	Fan System - Variable Speed Drive	employee	New	10.10	10	\$4.66	9%	38%	\$69.11	0.04	0.04	FAN_VSD-Motors-UN-v1.0-5
Paper Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	9.93	10	\$0.75	17%	50%	\$39.01	0.04	0.04	CMPAIR_EQPT-Motors-7PLN-v5-2
Paper Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	0.00	0.00	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.00	0.00	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	11.35	10	\$1.23	9%	15%	\$16.21	0.01	0.01	E3T
Paper Mfg	Motors	Compressed Air - System Controls	employee	New	2.27	10	\$0.53	9%	38%	\$2.98	0.01	0.01	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Leak Management Program	employee	New	5.67	10	\$0.54	18%	75%	\$41.91	0.04	0.04	CMPAIR_LEAK-Motors-7PLN-v5-1
Paper Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	4.26	15	\$3.27	26%	45%	\$93.77	0.02	0.02	CMPAIR_VSD-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.14	10	\$0.05	17%	50%	\$53.10	0.00	0.00	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Paper Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	0.85	10	\$0.16	17%	50%	\$28.82	0.00	0.00	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	0.02	0.02	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Paper Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	0.85	15	\$0.45	17%	50%	\$64.46	0.00	0.00	CMPAIR_STORAGE-Motors-UN-v1.0-3
Paper Mfg	Motors	Compressed Air - End Use Optimization	employee	New	7.94	6	\$1.23	26%	45%	\$32.53	0.01	0.01	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Paper Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	22.55	10	\$7.94	25%	45%	\$52.72	0.06	0.06	MATHAND_VSD-Material Handling-7PLN-v5-2
Paper Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	0.46	10	\$0.19	10%	50%	\$63.27	0.01	0.01	MTR_GRWND<100HP-Motors-7PLN-v5-17
Paper Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.25	10	\$0.07	6%	25%	\$40.42	0.00	0.00	MTR_GRWND>100HP-Motors-7PLN-v5-25
Paper Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	3.82	12	\$0.85	16%	25%	\$30.51	0.03	0.03	2015-mdu-irp-report--volume-iii.pdf
Paper Mfg	Motors	Motors - Synchronous Belts	employee	New	1.02	10	\$0.26	16%	36%	\$37.60	0.01	0.01	DRV_SYNBELT-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	911.55	10	\$113.37	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	1,333.77	15	\$306.41	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Paper Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	2,722.77	10	\$604.92	0%	0%	\$33.29	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Paper Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	431.17	1	\$54.66	0%	0%	\$123.11	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Paper Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	167.15	2	\$14.74	0%	0%	\$45.30	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Paper Mfg	Process	Dairy - Milk Precoolers	employee	New	0.74	15	\$0.35	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Paper Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	40.34	15	\$5.23	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Paper Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	775.66	15	\$100.19	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Paper Mfg	Motors	Automatic Milker Takeoffs	Cows	New	16.89	10	\$168.90	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Paper Mfg	Process	Clean Room: Change Filter Strategy	employee	New	0.99	15	\$0.01	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Chiller Optimize	employee	New	0.22	15	\$0.02	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Paper Mfg	Process	Clean Room: Clean Room HVAC	employee	New	0.13	15	\$0.03	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.13	15	\$0.08	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.12	15	\$0.03	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.25	15	\$0.13	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Paper Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.25	15	\$0.00	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Paper Mfg	Motors	Panel: Hydraulic Press	employee	New	33.72	10	\$7.93	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Paper Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	34.92	10	\$0.59	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Paper Mfg	Process	Metal: New Arc Furnace	employee	New	3.37	10	\$0.36	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Paper Mfg	Process	Paper: Premium Control Large Material	employee	New	0.64	10	\$0.33	15%	40%	\$77.33	0.02	0.02	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Paper Mfg	Process	Paper: Efficient Pulp Screen	employee	New	0.52	10	\$0.11	15%	29%	\$31.80	0.01	0.01	PAPER_PULPSCRN-Process-7PLN-v5-1
Paper Mfg	Process	Kraft: Effluent Treatment System	employee	New	0.52	10	\$0.04	15%	25%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Paper Mfg	Motors	Kraft: Efficient Agitator	employee	New	60.21	10	\$5.92	15%	29%	\$14.73	0.17	0.17	PAPER_EFFAG-Process-7PLN-v5-1
Paper Mfg	Process	Mech Pulp: Premium Process	employee	New	0.01	5	\$0.00	15%	38%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Paper Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	0.54	1	\$0.02	15%	52%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Paper Mfg	Cooling	Transformer - High Efficiency	employee	New	0.17	10	\$0.57	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Heating	Transformer - High Efficiency	employee	New	0.35	10	\$0.57	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Ventilation	Transformer - High Efficiency	employee	New	0.01	10	\$0.57	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	0.12	10	\$0.57	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.03	10	\$0.57	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Motors	Transformer - High Efficiency	employee	New	3.82	10	\$0.57	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Process	Transformer - High Efficiency	employee	New	0.26	10	\$0.57	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	0.08	10	\$0.57	15%	15%	\$17.43	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Paper Mfg	Cooling	Strategic Energy Management	employee	New	0.50	3	\$1.14	3%	11%	\$29.29	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Heating	Strategic Energy Management	employee	New	1.02	3	\$1.14	3%	11%	\$29.29	0.00	0.00	IND_SEM-HVAC-AEG-1

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Paper Mfg	Ventilation	Strategic Energy Management	employee	New	0.04	3	\$1.14	3%	11%	\$29.29	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Interior Lighting	Strategic Energy Management	employee	New	0.35	3	\$1.14	3%	11%	\$29.29	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Exterior Lighting	Strategic Energy Management	employee	New	0.09	3	\$1.14	3%	11%	\$29.29	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Motors	Strategic Energy Management	employee	New	11.04	3	\$1.14	3%	11%	\$29.29	0.01	0.01	IND_SEM-Motors-AEG-1
Paper Mfg	Process	Strategic Energy Management	employee	New	0.74	3	\$1.14	3%	11%	\$29.29	0.00	0.00	IND_SEM-Process-AEG-1
Paper Mfg	Miscellaneous	Strategic Energy Management	employee	New	0.22	3	\$1.14	3%	11%	\$29.29	0.00	0.00	IND_SEM-Process-AEG-1
Paper Mfg	Interior Lighting	Commissioning	employee	New	0.40	3	\$6.75	10%	35%	\$169.72	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Exterior Lighting	Commissioning	employee	New	0.10	3	\$6.75	10%	35%	\$169.72	0.00	0.00	IND_SEM-HVAC-AEG-1
Paper Mfg	Motors	Commissioning	employee	New	12.74	3	\$6.75	10%	35%	\$169.72	0.03	0.03	IND_SEM-HVAC-AEG-1
Paper Mfg	Process	Commissioning	employee	New	0.86	3	\$6.75	10%	35%	\$169.72	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Miscellaneous	Commissioning	employee	New	0.25	3	\$6.75	10%	35%	\$169.72	0.00	0.00	IND_SEM-Lighting-AEG-1
Paper Mfg	Interior Lighting	Retrocommissioning	employee	New	0.40	3	\$4.29	0%	0%	\$107.74	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Exterior Lighting	Retrocommissioning	employee	New	0.10	3	\$4.29	0%	0%	\$107.74	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Motors	Retrocommissioning	employee	New	12.74	3	\$4.29	0%	0%	\$107.74	0.00	0.00	IND_RCX-Motors-AEG-1
Paper Mfg	Process	Retrocommissioning	employee	New	0.86	3	\$4.29	0%	0%	\$107.74	0.00	0.00	IND_RCX-Process-AEG-1
Paper Mfg	Miscellaneous	Retrocommissioning	employee	New	0.25	3	\$4.29	0%	0%	\$107.74	0.00	0.00	IND_RCX-Process-AEG-1

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Paper Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	1.41	12	\$0.77	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Paper Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Paper Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	23.51	11	\$18.32	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Paper Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Paper Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Paper Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	27.69	28.15	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	20.25	20.32	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	12.22	12.33	Building Energy Simulation Tool

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Petroleum Refining	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	10.80	10.98	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.86	0.86	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.52	0.52	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.21	0.22	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	13.50	13.55	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	8.14	8.22	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	3.48	3.54	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	1.90	1.91	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	1.15	1.16	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	8.86	9.02	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	73.84	75.13	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	35.85	36.48	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	6.65	6.81	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	29.81	30.54	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	Existing	9.91	5	\$0.40	18%	30%	\$9.93	31.90	32.72	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	4.15	4.21	VENT_DCV-Ventilation-7PLN-v5-5

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Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	129.07	132.20	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	182.87	183.84	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	9.09	9.37	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	51.33	52.20	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	37.55	37.68	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	22.65	22.86	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	7.40	15	\$0.36	7%	33%	\$6.50	196.31	208.89	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	10.36	15	\$0.60	7%	33%	\$7.66	274.83	292.45	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.92	1.00	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	35.65	36.36	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	36.51	37.23	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	42.95	44.72	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	62.64	65.22	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	42.82	44.58	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	30,848.81	20	\$10,605.96	15%	20%	\$36.88	94.39	94.39	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	Existing	439.80	15	\$440.64	20%	50%	\$122.12	136.96	136.96	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	Existing	703.68	15	\$308.40	20%	50%	\$53.42	219.14	219.14	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	Existing	21,914.00	10	\$3,213.07	9%	38%	\$55.29	6,537.67	6,537.67	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	Existing	16,435.50	12	\$4,896.71	9%	38%	(\$25.77)	4,821.50	4,821.50	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	Existing	16,435.50	10	\$5,103.83	9%	38%	\$46.53	4,821.50	4,821.50	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	Existing	1,975.85	10	\$198.65	9%	38%	\$48.38	589.46	589.46	FAN_EQPTF-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Flow Optimization	employee	Existing	2,335.10	10	\$328.68	9%	38%	\$17.76	685.02	685.02	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	Existing	3,592.46	10	\$1,656.96	9%	38%	\$69.11	1,053.88	1,053.88	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	Existing	10,058.89	10	\$755.12	17%	50%	\$39.01	3,501.05	3,501.05	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	259.18	259.18	CMPAIR_HTCPDES DRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	17.38	17.38	CMPAIR_RFRGD DRY-Motors-MEMD-v. 2014-1

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Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	11,495.87	10	\$1,243.71	9%	15%	\$16.21	709.98	709.98	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	Existing	2,299.17	10	\$539.91	9%	38%	\$2.98	674.48	674.48	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	Existing	5,747.94	10	\$542.74	18%	75%	\$41.91	3,429.60	3,429.60	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	Existing	4,310.95	15	\$3,316.29	26%	45%	\$93.77	843.10	843.10	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	143.70	10	\$50.93	17%	50%	\$53.10	50.01	50.01	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	862.19	10	\$165.81	17%	50%	\$28.82	300.09	300.09	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	849.40	849.40	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	862.19	15	\$455.99	17%	50%	\$64.46	300.09	300.09	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	Existing	8,047.11	6	\$1,245.21	26%	45%	\$32.53	1,573.79	1,573.79	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	Existing	4,821.53	10	\$1,696.66	25%	45%	\$52.72	992.59	992.59	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	345.75	10	\$146.00	10%	50%	\$63.27	711.78	711.78	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	192.08	10	\$51.82	6%	25%	\$40.42	187.83	187.83	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	2,881.23	12	\$640.87	16%	25%	\$30.51	1,408.72	1,408.72	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	Existing	768.33	10	\$192.80	16%	36%	\$37.60	802.26	802.26	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	Existing	139,998.97	10	\$17,411.24	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	Existing	204,843.84	15	\$47,059.90	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	1,586,502.44	10	\$604.92	0%	0%	\$0.06	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	66,220.24	1	\$54.66	0%	0%	\$0.80	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	25,670.98	2	\$14.74	0%	0%	\$0.29	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	Existing	2,932.01	15	\$1,402.15	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	5.62	15	\$0.73	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	410.29	15	\$53.00	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	Existing	35,429.52	10	\$354,295.24	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	Existing	94.40	15	\$0.72	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	Existing	869.21	15	\$83.03	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	Existing	527.76	15	\$100.22	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	527.76	15	\$314.80	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	11.80	15	\$2.58	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	23.60	15	\$12.47	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	23.60	15	\$0.25	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	Existing	7,208.87	10	\$1,695.64	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	7,466.33	10	\$126.99	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	Existing	4,328.24	10	\$468.74	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	Existing	875.33	10	\$451.76	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	Existing	701.11	10	\$148.81	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	Existing	701.11	10	\$61.01	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	Existing	12,872.98	10	\$1,265.33	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	Existing	7.85	5	\$1.04	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	114.91	1	\$4.83	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	Existing	317.78	10	\$510.29	15%	15%	\$17.48	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	Existing	677.75	10	\$510.29	15%	15%	\$17.48	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	Existing	25.70	10	\$510.29	15%	15%	\$17.48	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	Existing	65.02	10	\$510.29	15%	15%	\$17.48	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	Existing	15.15	10	\$510.29	15%	15%	\$17.48	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Transformer - High Efficiency	employee	Existing	2,881.23	10	\$510.29	15%	15%	\$17.48	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	Existing	350.56	10	\$510.29	15%	15%	\$17.48	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	Existing	42.43	10	\$510.29	15%	15%	\$17.48	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	Existing	918.04	3	\$1,024.13	3%	11%	\$29.38	3.12	3.18	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	Existing	1,957.94	3	\$1,024.13	3%	11%	\$29.38	2.38	2.38	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	Existing	74.25	3	\$1,024.13	3%	11%	\$29.38	1.42	1.44	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	Existing	187.85	3	\$1,024.13	3%	11%	\$29.38	3.15	3.32	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	Existing	43.76	3	\$1,024.13	3%	11%	\$29.38	0.80	0.82	IND_SEM-Lighting-AEG-1
Petroleum Refining	Motors	Strategic Energy Management	employee	Existing	8,323.55	3	\$1,024.13	3%	11%	\$29.38	164.04	164.04	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	Existing	1,012.72	3	\$1,024.13	3%	11%	\$29.38	19.96	19.96	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	Existing	122.57	3	\$1,024.13	3%	11%	\$29.38	4.17	3.40	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	Existing	216.75	3	\$5,255.65	0%	0%	\$169.90	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	Existing	50.50	3	\$5,255.65	0%	0%	\$169.90	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	Existing	9,604.10	3	\$5,255.65	0%	0%	\$169.90	0.00	0.00	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	Existing	1,168.52	3	\$5,255.65	0%	0%	\$169.90	0.00	0.00	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	Existing	141.43	3	\$5,255.65	0%	0%	\$169.90	0.00	0.00	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Interior Lighting	Retrocommissioning	employee	Existing	216.75	3	\$3,336.39	5%	39%	\$107.86	61.81	65.03	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	Existing	50.50	3	\$3,336.39	5%	39%	\$107.86	15.65	16.07	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	Existing	9,604.10	3	\$3,336.39	5%	39%	\$107.86	3,217.80	3,217.80	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	Existing	1,168.52	3	\$3,336.39	5%	39%	\$107.86	391.51	391.51	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	Existing	141.43	3	\$3,336.39	5%	39%	\$107.86	81.71	66.75	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	2,960.57	12	\$1,615.27	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	49,306.51	11	\$38,420.34	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	Existing	940.81	20	\$470.40	0%	100%	\$64.70	3,303.84	3,303.84	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	Existing	114.47	20	\$470.40	0%	100%	\$64.70	401.97	401.97	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	Existing	940.81	20	\$352.80	0%	100%	\$51.69	3,303.84	3,303.84	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	Existing	114.47	20	\$352.80	0%	100%	\$51.69	401.97	401.97	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Petroleum Refining	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	12.05	12.07	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	8.21	8.21	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	4.82	4.82	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	4.70	4.71	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.35	0.35	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.20	0.20	Building Energy Simulation Tool
Petroleum Refining	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.09	0.09	Building Energy Simulation Tool
Petroleum Refining	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	5.48	5.48	Building Energy Simulation Tool
Petroleum Refining	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	3.21	3.21	Building Energy Simulation Tool
Petroleum Refining	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	1.49	1.49	Building Energy Simulation Tool
Petroleum Refining	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.76	0.76	Building Energy Simulation Tool
Petroleum Refining	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.44	0.44	Building Energy Simulation Tool
Petroleum Refining	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	1.52	1.52	AEG-BEST

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Petroleum Refining	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	18.16	18.16	AEG-BEST
Petroleum Refining	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	8.82	8.82	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Petroleum Refining	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	1.66	1.66	CHLR_VSPMP-Cooling-SCE-17_R0-86
Petroleum Refining	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	5.18	5.18	AEG-BEST
Petroleum Refining	Cooling	HVAC - Economizer	sqft	New	10.52	5	\$0.40	18%	30%	\$9.23	2.82	2.83	AEG-BEST
Petroleum Refining	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.97	0.97	VENT_DCV-Ventilation-7PLN-v5-5
Petroleum Refining	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	33.67	33.76	HVLS-Cooling-AEG-1
Petroleum Refining	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	44.44	44.44	HVLS-Heating-AEG-1
Petroleum Refining	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.41	0.41	RTU_MNT-Cooling-PGE-R2-1
Petroleum Refining	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	9.62	9.64	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	6.56	6.56	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	3.84	3.84	STAT_WIFI-All-7PLN-v2-1
Petroleum Refining	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	6.25	15	\$0.36	22%	41%	\$7.08	80.46	80.86	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	8.75	15	\$0.60	22%	41%	\$8.35	112.64	113.20	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Petroleum Refining	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.20	0.20	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3

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Petroleum Refining	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Petroleum Refining	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Petroleum Refining	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	6.42	6.48	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Petroleum Refining	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	9.09	9.16	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	6.30	6.40	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Petroleum Refining	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	4.83	4.91	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Petroleum Refining	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	4.90	4.98	CLTG_EXT_PV-Exterior Lighting-AEG-2
Petroleum Refining	Miscellaneous	High Efficiency Battery Chargers	Unit	New	30,848.81	20	\$10,605.96	15%	20%	\$36.88	29.40	29.40	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Petroleum Refining	Process	Refrigeration - Floating Head Pressure	employee	New	439.80	15	\$440.64	20%	50%	\$122.12	32.33	32.33	RFG_FHPC-Refrigeration-RTF-v1.3-23
Petroleum Refining	Process	Refrigeration - System Optimization	employee	New	703.68	15	\$308.40	20%	50%	\$53.42	51.73	51.73	AEG Research - prior study
Petroleum Refining	Motors	Pumping System - Equipment Upgrade	employee	New	21,914.00	10	\$3,213.07	9%	38%	\$55.29	1,074.19	1,074.19	PUMP_EQPT-Motors-7PLN-v5-1
Petroleum Refining	Motors	Pumping System - System Optimization	employee	New	16,435.50	12	\$4,896.71	9%	38%	(\$25.77)	1,152.23	1,152.23	PUMP_SYSOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Pumping System - Variable Speed Drive	employee	New	16,435.50	10	\$5,103.83	9%	38%	\$46.53	1,022.67	1,022.67	PUMP_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Fan System - Equipment Upgrade	employee	New	1,975.85	10	\$198.65	9%	38%	\$48.38	96.85	96.85	FAN_EQPTF-Motors-UN-v1.0-5

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Petroleum Refining	Motors	Fan System - Flow Optimization	employee	New	2,335.10	10	\$328.68	9%	38%	\$17.76	145.30	145.30	FAN_FLOWOPT-Motors-UN-v1.0-5
Petroleum Refining	Motors	Fan System - Variable Speed Drive	employee	New	3,592.46	10	\$1,656.96	9%	38%	\$69.11	223.54	223.54	FAN_VSD-Motors-UN-v1.0-5
Petroleum Refining	Motors	Compressed Air - Equipment Upgrade	employee	New	10,058.89	10	\$755.12	17%	50%	\$39.01	575.25	575.25	CMPAIR_EQPT-Motors-7PLN-v5-2
Petroleum Refining	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	73.20	73.20	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	2.86	2.86	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	11,495.87	10	\$1,243.71	9%	15%	\$16.21	150.59	150.59	E3T
Petroleum Refining	Motors	Compressed Air - System Controls	employee	New	2,299.17	10	\$539.91	9%	38%	\$2.98	143.06	143.06	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Leak Management Program	employee	New	5,747.94	10	\$542.74	18%	75%	\$41.91	563.51	563.51	CMPAIR_LEAK-Motors-7PLN-v5-1
Petroleum Refining	Motors	Compressed Air - Variable Speed Drive	employee	New	4,310.95	15	\$3,316.29	26%	45%	\$93.77	238.12	238.12	CMPAIR_VSD-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	143.70	10	\$50.93	17%	50%	\$53.10	8.22	8.22	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Petroleum Refining	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	862.19	10	\$165.81	17%	50%	\$28.82	49.31	49.31	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	238.87	238.87	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Petroleum Refining	Motors	Compressed Air - Receiver Capacity Addition	employee	New	862.19	15	\$455.99	17%	50%	\$64.46	70.85	70.85	CMPAIR_STORAGE-Motors-UN-v1.0-3
Petroleum Refining	Motors	Compressed Air - End Use Optimization	employee	New	8,047.11	6	\$1,245.21	26%	45%	\$32.53	231.41	231.41	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Petroleum Refining	Motors	Material Handling - Variable Speed Drive	employee	New	4,821.53	10	\$1,696.66	25%	45%	\$52.72	210.54	210.54	MATHAND_VSD-Material Handling-7PLN-v5-2
Petroleum Refining	Motors	Motors - Green Rewind (<100 HP)	employee	New	345.75	10	\$146.00	10%	50%	\$63.27	150.97	150.97	MTR_GRWND<100HP-Motors-7PLN-v5-17
Petroleum Refining	Motors	Motors - Green Rewind (100 HP+)	employee	New	192.08	10	\$51.82	6%	25%	\$40.42	39.84	39.84	MTR_GRWND>100HP-Motors-7PLN-v5-25
Petroleum Refining	Motors	Switch from Belt Drive to Direct Drive	employee	New	2,881.23	12	\$640.87	16%	25%	\$30.51	336.65	336.65	2015-mdu-irp-report--volume-iii.pdf
Petroleum Refining	Motors	Motors - Synchronous Belts	employee	New	768.33	10	\$192.80	16%	36%	\$37.60	131.82	131.82	DRV_SYNBELT-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Engine Block Heater Controls	Unit	New	139,998.97	10	\$17,411.24	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Circulating Engine Block Heater	unit	New	204,843.84	15	\$47,059.90	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Petroleum Refining	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	1,586,502.44	10	\$604.92	0%	0%	\$0.06	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Petroleum Refining	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	66,220.24	1	\$54.66	0%	0%	\$0.80	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	25,670.98	2	\$14.74	0%	0%	\$0.29	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Petroleum Refining	Process	Dairy - Milk Precoolers	employee	New	2,932.01	15	\$1,402.15	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Petroleum Refining	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	5.62	15	\$0.73	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Petroleum Refining	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	410.29	15	\$53.00	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Petroleum Refining	Motors	Automatic Milker Takeoffs	Cows	New	35,429.52	10	\$354,295.24	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Petroleum Refining	Process	Clean Room: Change Filter Strategy	employee	New	94.40	15	\$0.72	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Chiller Optimize	employee	New	869.21	15	\$83.03	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Petroleum Refining	Process	Clean Room: Clean Room HVAC	employee	New	527.76	15	\$100.22	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Solidstate Chiller	employee	New	527.76	15	\$314.80	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	11.80	15	\$2.58	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	23.60	15	\$12.47	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Petroleum Refining	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	23.60	15	\$0.25	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Petroleum Refining	Motors	Panel: Hydraulic Press	employee	New	7,208.87	10	\$1,695.64	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Petroleum Refining	Motors	Wood: Replace Pneumatic Conveyor	employee	New	7,466.33	10	\$126.99	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Metal: New Arc Furnace	employee	New	4,328.24	10	\$468.74	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Petroleum Refining	Process	Paper: Premium Control Large Material	employee	New	875.33	10	\$451.76	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Petroleum Refining	Process	Paper: Efficient Pulp Screen	employee	New	701.11	10	\$148.81	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Petroleum Refining	Process	Kraft: Effluent Treatment System	employee	New	701.11	10	\$61.01	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Petroleum Refining	Motors	Kraft: Efficient Agitator	employee	New	12,872.98	10	\$1,265.33	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Petroleum Refining	Process	Mech Pulp: Premium Process	employee	New	7.85	5	\$1.04	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Petroleum Refining	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	114.91	1	\$4.83	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Petroleum Refining	Cooling	Transformer - High Efficiency	employee	New	338.60	10	\$510.29	15%	15%	\$17.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Heating	Transformer - High Efficiency	employee	New	685.72	10	\$510.29	15%	15%	\$17.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Ventilation	Transformer - High Efficiency	employee	New	24.86	10	\$510.29	15%	15%	\$17.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Interior Lighting	Transformer - High Efficiency	employee	New	55.23	10	\$510.29	15%	15%	\$17.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Exterior Lighting	Transformer - High Efficiency	employee	New	14.15	10	\$510.29	15%	15%	\$17.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Motors	Transformer - High Efficiency	employee	New	2,881.23	10	\$510.29	15%	15%	\$17.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Process	Transformer - High Efficiency	employee	New	350.56	10	\$510.29	15%	15%	\$17.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Miscellaneous	Transformer - High Efficiency	employee	New	41.70	10	\$510.29	15%	15%	\$17.37	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Petroleum Refining	Cooling	Strategic Energy Management	employee	New	978.18	3	\$1,024.13	3%	11%	\$29.18	0.16	0.16	IND_SEM-HVAC-AEG-1
Petroleum Refining	Heating	Strategic Energy Management	employee	New	1,980.97	3	\$1,024.13	3%	11%	\$29.18	0.11	0.11	IND_SEM-HVAC-AEG-1
Petroleum Refining	Ventilation	Strategic Energy Management	employee	New	71.81	3	\$1,024.13	3%	11%	\$29.18	0.07	0.07	IND_SEM-HVAC-AEG-1
Petroleum Refining	Interior Lighting	Strategic Energy Management	employee	New	159.55	3	\$1,024.13	3%	11%	\$29.18	0.14	0.14	IND_SEM-Lighting-AEG-1
Petroleum Refining	Exterior Lighting	Strategic Energy Management	employee	New	40.89	3	\$1,024.13	3%	11%	\$29.18	0.04	0.04	IND_SEM-Lighting-AEG-1

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Petroleum Refining	Motors	Strategic Energy Management	employee	New	8,323.55	3	\$1,024.13	3%	11%	\$29.18	7.57	7.57	IND_SEM-Motors-AEG-1
Petroleum Refining	Process	Strategic Energy Management	employee	New	1,012.72	3	\$1,024.13	3%	11%	\$29.18	0.92	0.92	IND_SEM-Process-AEG-1
Petroleum Refining	Miscellaneous	Strategic Energy Management	employee	New	120.45	3	\$1,024.13	3%	11%	\$29.18	0.18	0.13	IND_SEM-Process-AEG-1
Petroleum Refining	Interior Lighting	Commissioning	employee	New	184.10	3	\$5,255.65	5%	39%	\$170.32	4.89	4.93	IND_SEM-HVAC-AEG-1
Petroleum Refining	Exterior Lighting	Commissioning	employee	New	47.18	3	\$5,255.65	5%	39%	\$170.32	1.26	1.27	IND_SEM-HVAC-AEG-1
Petroleum Refining	Motors	Commissioning	employee	New	9,604.10	3	\$5,255.65	5%	39%	\$170.32	437.15	437.15	IND_SEM-HVAC-AEG-1
Petroleum Refining	Process	Commissioning	employee	New	1,168.52	3	\$5,255.65	5%	39%	\$170.32	53.19	53.19	IND_SEM-Lighting-AEG-1
Petroleum Refining	Miscellaneous	Commissioning	employee	New	138.99	3	\$5,255.65	5%	39%	\$170.32	3.82	3.17	IND_SEM-Lighting-AEG-1
Petroleum Refining	Interior Lighting	Retrocommissioning	employee	New	184.10	3	\$3,336.39	0%	0%	\$108.12	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Exterior Lighting	Retrocommissioning	employee	New	47.18	3	\$3,336.39	0%	0%	\$108.12	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Motors	Retrocommissioning	employee	New	9,604.10	3	\$3,336.39	0%	0%	\$108.12	0.00	0.00	IND_RCX-Motors-AEG-1
Petroleum Refining	Process	Retrocommissioning	employee	New	1,168.52	3	\$3,336.39	0%	0%	\$108.12	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Miscellaneous	Retrocommissioning	employee	New	138.99	3	\$3,336.39	0%	0%	\$108.12	0.00	0.00	IND_RCX-Process-AEG-1
Petroleum Refining	Motors	Municipal Sewage Treatment - Optimization	employee	New	2,960.57	12	\$1,615.27	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Petroleum Refining	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1

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Petroleum Refining	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	49,306.5 ₁	11	\$38,420.34	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Petroleum Refining	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	9%	38%	\$0.00	0.00	0.00	TBD
Petroleum Refining	Motors	WHP - ORC	employee	New	940.81	20	\$470.40	0%	100%	\$64.70	1,234.82	1,234.82	WHP Analysis
Petroleum Refining	Process	WHP - ORC	employee	New	114.47	20	\$470.40	0%	100%	\$64.70	150.24	150.24	WHP Analysis
Petroleum Refining	Motors	WHP - High Temperature Waste Heat	employee	New	940.81	20	\$352.80	0%	100%	\$51.69	1,234.82	1,234.82	WHP Analysis
Petroleum Refining	Process	WHP - High Temperature Waste Heat	employee	New	114.47	20	\$352.80	0%	100%	\$51.69	150.24	150.24	WHP Analysis
Petroleum Refining	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Petroleum Refining	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	19.70	20.03	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	14.41	14.46	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	8.69	8.77	Building Energy Simulation Tool

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Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	7.68	7.81	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.61	0.61	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.37	0.37	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.15	0.15	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	9.61	9.64	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	5.80	5.85	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	2.48	2.52	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	1.35	1.36	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.82	0.82	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	6.30	6.41	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	52.54	53.46	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	25.51	25.96	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	4.73	4.85	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	21.21	21.73	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	Existing	10.34	5	\$0.40	18%	30%	\$9.52	22.70	23.28	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	2.95	2.99	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	91.83	94.06	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	130.11	130.80	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	6.47	6.66	RTU_MNT-Cooling-PGE-R2-1
Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	36.52	37.14	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	26.72	26.81	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	16.12	16.26	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	7.72	15	\$0.36	7%	33%	\$6.23	170.76	181.71	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	10.81	15	\$0.60	7%	33%	\$7.34	239.06	254.40	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.80	0.87	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	31.05	31.66	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	31.79	32.42	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	37.41	38.95	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	54.55	56.80	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	37.29	38.83	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	51,592.55	20	\$17,737.76	15%	20%	\$36.88	115.58	115.58	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	302.79	15	\$303.37	20%	50%	\$122.12	27.62	27.62	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	Existing	484.47	15	\$212.33	20%	50%	\$53.42	44.18	44.18	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	4,288.74	10	\$628.82	9%	38%	\$55.29	374.70	374.70	PUMP_EQPT-Motors-7PLN-v5-1

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Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	Existing	3,216.55	12	\$958.32	9%	38%	(\$25.77)	276.34	276.34	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	3,216.55	10	\$998.86	9%	38%	\$46.53	276.34	276.34	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	Existing	3,319.46	10	\$333.74	9%	38%	\$48.38	290.02	290.02	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	Existing	3,922.99	10	\$552.19	9%	38%	\$17.76	337.03	337.03	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	Existing	6,035.37	10	\$2,783.72	9%	38%	\$69.11	518.51	518.51	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	1,901.14	10	\$142.72	17%	50%	\$39.01	193.78	193.78	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	14.35	14.35	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.96	0.96	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	2,172.73	10	\$235.06	9%	15%	\$16.21	39.30	39.30	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	Existing	434.55	10	\$102.04	9%	38%	\$2.98	37.33	37.33	CMPAIR_SYSCRTL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	Existing	1,086.37	10	\$102.58	18%	75%	\$41.91	189.83	189.83	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	814.78	15	\$626.78	26%	45%	\$93.77	46.67	46.67	CMPAIR_VSD-Motors-UN-v1.0-3

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Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	27.16	10	\$9.62	17%	50%	\$53.10	2.77	2.77	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	162.96	10	\$31.34	17%	50%	\$28.82	16.61	16.61	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	47.01	47.01	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	162.96	15	\$86.18	17%	50%	\$64.46	16.61	16.61	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	Existing	1,520.91	6	\$235.35	26%	45%	\$32.53	87.11	87.11	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	23,396.47	10	\$8,233.03	25%	45%	\$52.72	1,410.56	1,410.56	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	331.08	10	\$139.81	10%	50%	\$63.27	199.61	199.61	MTR_GRWND<100HP-Motors-7PLN-v5-17
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	183.93	10	\$49.62	6%	25%	\$40.42	52.67	52.67	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	2,759.01	12	\$613.69	16%	25%	\$30.51	395.05	395.05	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	Existing	735.74	10	\$184.62	16%	36%	\$37.60	224.98	224.98	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	234,138.82	10	\$29,119.12	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	342,587.49	15	\$78,704.50	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100

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Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	124,196.21	10	\$604.92	0%	0%	\$0.73	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	110,748.87	1	\$54.66	0%	0%	\$0.48	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	42,932.97	2	\$14.74	0%	0%	\$0.18	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	Existing	2,018.63	15	\$965.36	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	34.16	15	\$4.43	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	116.63	15	\$15.06	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	Existing	6,933.83	10	\$69,338.26	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	Existing	452.92	15	\$3.45	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	Existing	598.44	15	\$57.16	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	Existing	363.35	15	\$69.00	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	363.35	15	\$216.73	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	56.62	15	\$12.40	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1

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Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	113.23	15	\$59.81	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	113.23	15	\$1.20	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	Existing	34,981.02	10	\$8,228.09	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	36,230.35	10	\$616.21	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	Existing	29,606.25	10	\$3,206.29	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	Existing	3,311.70	10	\$1,709.19	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	Existing	2,652.56	10	\$563.01	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	Existing	2,652.56	10	\$230.82	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	Existing	62,466.11	10	\$6,140.03	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	Existing	29.69	5	\$3.95	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	557.60	1	\$23.42	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	Existing	772.07	10	\$813.68	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	Existing	1,646.62	10	\$813.68	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	Existing	62.44	10	\$813.68	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	193.36	10	\$813.68	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	45.05	10	\$813.68	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	Existing	2,759.01	10	\$813.68	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	Existing	1,326.28	10	\$813.68	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	177.39	10	\$813.68	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	Existing	2,230.41	3	\$1,633.02	3%	11%	\$29.27	2.22	2.26	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	Existing	4,756.89	3	\$1,633.02	3%	11%	\$29.27	1.69	1.70	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	Existing	180.38	3	\$1,633.02	3%	11%	\$29.27	1.01	1.02	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	Existing	558.61	3	\$1,633.02	3%	11%	\$29.27	2.74	2.89	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	Existing	130.14	3	\$1,633.02	3%	11%	\$29.27	0.69	0.71	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Motors	Strategic Energy Management	employee	Existing	7,970.47	3	\$1,633.02	3%	11%	\$29.27	46.00	46.00	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	Existing	3,831.48	3	\$1,633.02	3%	11%	\$29.27	22.11	22.11	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	Existing	512.47	3	\$1,633.02	3%	11%	\$29.27	5.10	4.17	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	Existing	644.55	3	\$6,869.28	0%	0%	\$164.31	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	Existing	150.16	3	\$6,869.28	0%	0%	\$164.31	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	Existing	9,196.70	3	\$6,869.28	0%	0%	\$164.31	0.00	0.00	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	Existing	4,420.94	3	\$6,869.28	0%	0%	\$164.31	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Miscellaneous	Commissioning	employee	Existing	591.32	3	\$6,869.28	0%	0%	\$164.31	0.00	0.00	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	Existing	644.55	3	\$4,360.75	10%	40%	\$104.31	47.50	49.97	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	Existing	150.16	3	\$4,360.75	10%	40%	\$104.31	12.02	12.35	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	Existing	9,196.70	3	\$4,360.75	10%	40%	\$104.31	796.22	796.22	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	Existing	4,420.94	3	\$4,360.75	10%	40%	\$104.31	382.75	382.75	IND_RCX-Process-AEG-1

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Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	Existing	591.32	3	\$4,360.75	10%	40%	\$104.31	88.29	72.12	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	579.41	12	\$316.12	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	9,649.66	11	\$7,519.15	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	Existing	3,066.60	20	\$1,533.30	0%	81%	\$49.01	2,541.04	2,541.04	WHP Analysis
Stone Clay Glass Products	Process	WHP - ORC	employee	Existing	1,474.14	20	\$1,533.30	0%	81%	\$49.01	1,221.50	1,221.50	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	3,066.60	20	\$1,149.97	0%	81%	\$39.16	2,541.04	2,541.04	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	Existing	1,474.14	20	\$1,149.97	0%	81%	\$39.16	1,221.50	1,221.50	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	8.58	8.59	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	5.84	5.84	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	3.43	3.43	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	3.34	3.35	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.25	0.25	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.14	0.14	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.07	0.07	Building Energy Simulation Tool
Stone Clay Glass Products	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	3.90	3.90	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	2.28	2.28	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	1.06	1.06	Building Energy Simulation Tool

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Stone Clay Glass Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.54	0.54	Building Energy Simulation Tool
Stone Clay Glass Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.32	0.32	Building Energy Simulation Tool
Stone Clay Glass Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	1.08	1.08	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	12.92	12.92	AEG-BEST
Stone Clay Glass Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	6.27	6.27	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	1.18	1.18	CHLR_VSPMP-Cooling-SCE-17_R0-86
Stone Clay Glass Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	3.68	3.68	AEG-BEST
Stone Clay Glass Products	Cooling	HVAC - Economizer	sqft	New	10.97	5	\$0.40	18%	30%	\$8.85	2.00	2.01	AEG-BEST
Stone Clay Glass Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.69	0.69	VENT_DCV-Ventilation-7PLN-v5-5
Stone Clay Glass Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	23.96	24.02	HVLS-Cooling-AEG-1
Stone Clay Glass Products	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	31.62	31.62	HVLS-Heating-AEG-1
Stone Clay Glass Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.29	0.29	RTU_MNT-Cooling-PGE-R2-1

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Stone Clay Glass Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	6.85	6.86	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	4.67	4.67	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	2.74	2.74	STAT_WIFI-AII-7PLN-v2-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	6.52	15	\$0.36	22%	41%	\$6.79	68.96	69.31	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	9.13	15	\$0.60	22%	41%	\$8.00	96.55	97.03	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.17	0.17	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	5.59	5.64	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Stone Clay Glass Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	7.92	7.98	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	5.48	5.57	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	4.20	4.27	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Stone Clay Glass Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	4.26	4.34	CLTG_EXT_PV-Exterior Lighting-AEG-2
Stone Clay Glass Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	51,592.55	20	\$17,737.76	15%	20%	\$36.88	36.00	36.00	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Stone Clay Glass Products	Process	Refrigeration - Floating Head Pressure	employee	New	302.79	15	\$303.37	20%	50%	\$122.12	6.52	6.52	RFG_FHPC-Refrigeration-RTF-v1.3-23
Stone Clay Glass Products	Process	Refrigeration - System Optimization	employee	New	484.47	15	\$212.33	20%	50%	\$53.42	10.43	10.43	AEG Research - prior study
Stone Clay Glass Products	Motors	Pumping System - Equipment Upgrade	employee	New	4,288.74	10	\$628.82	9%	38%	\$55.29	61.57	61.57	PUMP_EQPT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Pumping System - System Optimization	employee	New	3,216.55	12	\$958.32	9%	38%	(\$25.77)	66.04	66.04	PUMP_SYSOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Pumping System - Variable Speed Drive	employee	New	3,216.55	10	\$998.86	9%	38%	\$46.53	58.61	58.61	PUMP_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Fan System - Equipment Upgrade	employee	New	3,319.46	10	\$333.74	9%	38%	\$48.38	47.65	47.65	FAN_EQPTF-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Flow Optimization	employee	New	3,922.99	10	\$552.19	9%	38%	\$17.76	71.49	71.49	FAN_FLOWOPT-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Fan System - Variable Speed Drive	employee	New	6,035.37	10	\$2,783.72	9%	38%	\$69.11	109.98	109.98	FAN_VSD-Motors-UN-v1.0-5
Stone Clay Glass Products	Motors	Compressed Air - Equipment Upgrade	employee	New	1,901.14	10	\$142.72	17%	50%	\$39.01	31.84	31.84	CMPAIR_EQPT-Motors-7PLN-v5-2
Stone Clay Glass Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	4.05	4.05	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1

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Stone Clay Glass Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.16	0.16	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	2,172.73	10	\$235.06	9%	15%	\$16.21	8.34	8.34	E3T
Stone Clay Glass Products	Motors	Compressed Air - System Controls	employee	New	434.55	10	\$102.04	9%	38%	\$2.98	7.92	7.92	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Leak Management Program	employee	New	1,086.37	10	\$102.58	18%	75%	\$41.91	31.19	31.19	CMPAIR_LEAK-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Compressed Air - Variable Speed Drive	employee	New	814.78	15	\$626.78	26%	45%	\$93.77	13.18	13.18	CMPAIR_VSD-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	27.16	10	\$9.62	17%	50%	\$53.10	0.45	0.45	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Stone Clay Glass Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	162.96	10	\$31.34	17%	50%	\$28.82	2.73	2.73	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	13.22	13.22	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Stone Clay Glass Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	162.96	15	\$86.18	17%	50%	\$64.46	3.92	3.92	CMPAIR_STORAGE-Motors-UN-v1.0-3
Stone Clay Glass Products	Motors	Compressed Air - End Use Optimization	employee	New	1,520.91	6	\$235.35	26%	45%	\$32.53	12.81	12.81	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Stone Clay Glass Products	Motors	Material Handling - Variable Speed Drive	employee	New	23,396.47	10	\$8,233.03	25%	45%	\$52.72	299.19	299.19	MATHAND_VSD-Material Handling-7PLN-v5-2
Stone Clay Glass Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	331.08	10	\$139.81	10%	50%	\$63.27	42.34	42.34	MTR_GRWND<100HP-Motors-7PLN-v5-17

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Stone Clay Glass Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	183.93	10	\$49.62	6%	25%	\$40.42	11.17	11.17	MTR_GRWND>100HP-Motors-7PLN-v5-25
Stone Clay Glass Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	2,759.01	12	\$613.69	16%	25%	\$30.51	94.41	94.41	2015-mdu-irp-report--volume-iii.pdf
Stone Clay Glass Products	Motors	Motors - Synchronous Belts	employee	New	735.74	10	\$184.62	16%	36%	\$37.60	36.97	36.97	DRV_SYNBELT-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Engine Block Heater Controls	Unit	New	234,138.82	10	\$29,119.12	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Circulating Engine Block Heater	unit	New	342,587.49	15	\$78,704.50	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Stone Clay Glass Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	124,196.21	10	\$604.92	0%	0%	\$0.73	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	110,748.87	1	\$54.66	0%	0%	\$0.48	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	42,932.97	2	\$14.74	0%	0%	\$0.18	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Stone Clay Glass Products	Process	Dairy - Milk Precoolers	employee	New	2,018.63	15	\$965.36	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Stone Clay Glass Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	34.16	15	\$4.43	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Stone Clay Glass Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	116.63	15	\$15.06	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Stone Clay Glass Products	Motors	Automatic Milker Takeoffs	Cows	New	6,933.83	10	\$69,338.26	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1

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Stone Clay Glass Products	Process	Clean Room: Change Filter Strategy	employee	New	452.92	15	\$3.45	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Chiller Optimize	employee	New	598.44	15	\$57.16	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Clean Room: Clean Room HVAC	employee	New	363.35	15	\$69.00	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	363.35	15	\$216.73	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	56.62	15	\$12.40	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	113.23	15	\$59.81	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	113.23	15	\$1.20	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Stone Clay Glass Products	Motors	Panel: Hydraulic Press	employee	New	34,981.0 ₂	10	\$8,228.09	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	36,230.3 ₅	10	\$616.21	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Metal: New Arc Furnace	employee	New	29,606.2 ₅	10	\$3,206.29	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Premium Control Large Material	employee	New	3,311.70	10	\$1,709.19	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Stone Clay Glass Products	Process	Paper: Efficient Pulp Screen	employee	New	2,652.56	10	\$563.01	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1

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Stone Clay Glass Products	Process	Kraft: Effluent Treatment System	employee	New	2,652.56	10	\$230.82	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Kraft: Efficient Agitator	employee	New	62,466.11	10	\$6,140.03	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Stone Clay Glass Products	Process	Mech Pulp: Premium Process	employee	New	29.69	5	\$3.95	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Stone Clay Glass Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	557.60	1	\$23.42	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Stone Clay Glass Products	Cooling	Transformer - High Efficiency	employee	New	822.64	10	\$813.68	15%	15%	\$17.27	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Heating	Transformer - High Efficiency	employee	New	1,665.98	10	\$813.68	15%	15%	\$17.27	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Ventilation	Transformer - High Efficiency	employee	New	60.39	10	\$813.68	15%	15%	\$17.27	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Interior Lighting	Transformer - High Efficiency	employee	New	164.24	10	\$813.68	15%	15%	\$17.27	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Exterior Lighting	Transformer - High Efficiency	employee	New	42.09	10	\$813.68	15%	15%	\$17.27	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Motors	Transformer - High Efficiency	employee	New	2,759.01	10	\$813.68	15%	15%	\$17.27	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Process	Transformer - High Efficiency	employee	New	1,326.28	10	\$813.68	15%	15%	\$17.27	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Stone Clay Glass Products	Miscellaneous	Transformer - High Efficiency	employee	New	174.33	10	\$813.68	15%	15%	\$17.27	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Stone Clay Glass Products	Cooling	Strategic Energy Management	employee	New	2,376.52	3	\$1,633.02	3%	11%	\$29.01	0.11	0.11	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Heating	Strategic Energy Management	employee	New	4,812.82	3	\$1,633.02	3%	11%	\$29.01	0.08	0.08	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Ventilation	Strategic Energy Management	employee	New	174.47	3	\$1,633.02	3%	11%	\$29.01	0.05	0.05	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Interior Lighting	Strategic Energy Management	employee	New	474.47	3	\$1,633.02	3%	11%	\$29.01	0.12	0.12	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Exterior Lighting	Strategic Energy Management	employee	New	121.60	3	\$1,633.02	3%	11%	\$29.01	0.03	0.03	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Motors	Strategic Energy Management	employee	New	7,970.47	3	\$1,633.02	3%	11%	\$29.01	2.12	2.12	IND_SEM-Motors-AEG-1
Stone Clay Glass Products	Process	Strategic Energy Management	employee	New	3,831.48	3	\$1,633.02	3%	11%	\$29.01	1.02	1.02	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Strategic Energy Management	employee	New	503.63	3	\$1,633.02	3%	11%	\$29.01	0.22	0.16	IND_SEM-Process-AEG-1
Stone Clay Glass Products	Interior Lighting	Commissioning	employee	New	547.46	3	\$6,869.28	10%	40%	\$165.34	3.75	3.78	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Exterior Lighting	Commissioning	employee	New	140.30	3	\$6,869.28	10%	40%	\$165.34	0.97	0.98	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Motors	Commissioning	employee	New	9,196.70	3	\$6,869.28	10%	40%	\$165.34	108.04	108.04	IND_SEM-HVAC-AEG-1
Stone Clay Glass Products	Process	Commissioning	employee	New	4,420.94	3	\$6,869.28	10%	40%	\$165.34	51.94	51.94	IND_SEM-Lighting-AEG-1

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Stone Clay Glass Products	Miscellaneous	Commissioning	employee	New	581.11	3	\$6,869.28	10%	40%	\$165.34	4.13	3.43	IND_SEM-Lighting-AEG-1
Stone Clay Glass Products	Interior Lighting	Retrocommissioning	employee	New	547.46	3	\$4,360.75	0%	0%	\$104.96	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Exterior Lighting	Retrocommissioning	employee	New	140.30	3	\$4,360.75	0%	0%	\$104.96	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Motors	Retrocommissioning	employee	New	9,196.70	3	\$4,360.75	0%	0%	\$104.96	0.00	0.00	IND_RCX-Motors-AEG-1
Stone Clay Glass Products	Process	Retrocommissioning	employee	New	4,420.94	3	\$4,360.75	0%	0%	\$104.96	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Miscellaneous	Retrocommissioning	employee	New	581.11	3	\$4,360.75	0%	0%	\$104.96	0.00	0.00	IND_RCX-Process-AEG-1
Stone Clay Glass Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	579.41	12	\$316.12	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Stone Clay Glass Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Stone Clay Glass Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	9,649.66	11	\$7,519.15	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Stone Clay Glass Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Stone Clay Glass Products	Motors	WHP - ORC	employee	New	3,066.60	20	\$1,533.30	0%	81%	\$49.01	949.72	949.72	WHP Analysis

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Stone Clay Glass Products	Process	WHP - ORC	employee	New	1,474.14	20	\$1,533.30	0%	81%	\$49.01	456.54	456.54	WHP Analysis
Stone Clay Glass Products	Motors	WHP - High Temperature Waste Heat	employee	New	3,066.60	20	\$1,149.97	0%	81%	\$39.16	949.72	949.72	WHP Analysis
Stone Clay Glass Products	Process	WHP - High Temperature Waste Heat	employee	New	1,474.14	20	\$1,149.97	0%	81%	\$39.16	456.54	456.54	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Stone Clay Glass Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	2.28	2.32	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	1.67	1.67	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	1.01	1.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	0.89	0.90	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.07	0.07	Building Energy Simulation Tool

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Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.04	0.04	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	1.11	1.12	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	0.67	0.68	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	0.29	0.29	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.16	0.16	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.09	0.10	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	0.73	0.74	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	6.08	6.19	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	2.95	3.00	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	0.55	0.56	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	2.45	2.52	AEG-BEST

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Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.07	5	\$0.40	18%	30%	\$1,391.32	2.63	2.69	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	0.34	0.35	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	10.63	10.89	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	15.06	15.14	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	0.75	0.77	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	4.23	4.30	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	3.09	3.10	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	1.87	1.88	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.05	15	\$0.36	7%	33%	\$910.22	17.54	18.67	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.07	15	\$0.60	7%	33%	\$1,072.76	24.56	26.13	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.08	0.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	3.19	3.25	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	3.26	3.33	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	3.84	4.00	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	5.60	5.83	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	3.83	3.98	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	3,703.97	20	\$1,273.44	15%	20%	\$36.88	7.69	7.69	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	5.67	15	\$5.68	20%	50%	\$122.12	2.39	2.39	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	9.06	15	\$3.97	20%	50%	\$53.42	3.83	3.83	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	24.56	10	\$3.60	9%	38%	\$55.29	9.94	9.94	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	18.42	12	\$5.49	9%	38%	(\$25.77)	7.33	7.33	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	18.42	10	\$5.72	9%	38%	\$46.53	7.33	7.33	PUMP_VSD-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	6.45	10	\$0.65	9%	38%	\$48.38	2.61	2.61	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	7.62	10	\$1.07	9%	38%	\$17.76	3.04	3.04	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	11.73	10	\$5.41	9%	38%	\$69.11	4.67	4.67	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	43.42	10	\$3.26	17%	50%	\$39.01	20.51	20.51	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	1.52	1.52	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.10	0.10	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	49.62	10	\$5.37	9%	15%	\$16.21	4.16	4.16	E3T
Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	9.92	10	\$2.33	9%	38%	\$2.98	3.95	3.95	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	24.81	10	\$2.34	18%	75%	\$41.91	20.09	20.09	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	18.61	15	\$14.31	26%	45%	\$93.77	4.94	4.94	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.62	10	\$0.22	17%	50%	\$53.10	0.29	0.29	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	3.72	10	\$0.72	17%	50%	\$28.82	1.76	1.76	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	4.98	4.98	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	3.72	15	\$1.97	17%	50%	\$64.46	1.76	1.76	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	34.73	6	\$5.37	26%	45%	\$32.53	9.22	9.22	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	112.20	10	\$39.48	25%	45%	\$52.72	31.35	31.35	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	1.66	10	\$0.70	10%	50%	\$63.27	4.63	4.63	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	0.92	10	\$0.25	6%	25%	\$40.42	1.22	1.22	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	13.80	12	\$3.07	16%	25%	\$30.51	9.16	9.16	2015-mdu-irp-report--volume-iii.pdf
Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	3.68	10	\$0.92	16%	36%	\$37.60	5.21	5.21	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	16,809.48	10	\$2,090.54	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	24,595.32	15	\$5,650.42	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	3,556.12	10	\$604.92	0%	0%	\$25.49	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	7,950.97	1	\$54.66	0%	0%	\$6.68	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	3,082.28	2	\$14.74	0%	0%	\$2.46	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	37.77	15	\$18.06	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	26.21	15	\$3.40	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	35.70	15	\$4.61	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	39.71	10	\$397.07	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	16.42	15	\$0.13	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	11.20	15	\$1.07	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	6.80	15	\$1.29	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	6.80	15	\$4.06	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	2.05	15	\$0.45	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	4.11	15	\$2.17	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	4.11	15	\$0.04	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1

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Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	167.76	10	\$39.46	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	173.75	10	\$2.96	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	154.00	10	\$16.68	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	23.47	10	\$12.11	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	18.80	10	\$3.99	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	18.80	10	\$1.64	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	299.57	10	\$29.45	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.21	5	\$0.03	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	2.67	1	\$0.11	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	19.29	10	\$10.86	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	41.13	10	\$10.86	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	1.56	10	\$10.86	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	4.28	10	\$10.86	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.00	10	\$10.86	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	13.80	10	\$10.86	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	9.40	10	\$10.86	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	2.55	10	\$10.86	15%	15%	\$17.53	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	55.72	3	\$21.79	3%	11%	\$29.45	0.26	0.26	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	118.83	3	\$21.79	3%	11%	\$29.45	0.20	0.20	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	4.51	3	\$21.79	3%	11%	\$29.45	0.12	0.12	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	12.37	3	\$21.79	3%	11%	\$29.45	0.28	0.30	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	2.88	3	\$21.79	3%	11%	\$29.45	0.07	0.07	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	39.86	3	\$21.79	3%	11%	\$29.45	1.07	1.07	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	Existing	27.15	3	\$21.79	3%	11%	\$29.45	0.73	0.73	IND_SEM-Process-AEG-1

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Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	7.36	3	\$21.79	3%	11%	\$29.45	0.34	0.28	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	14.27	3	\$45.46	0%	0%	\$156.95	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	3.32	3	\$45.46	0%	0%	\$156.95	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	Existing	46.00	3	\$45.46	0%	0%	\$156.95	0.00	0.00	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	Existing	31.33	3	\$45.46	0%	0%	\$156.95	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	8.49	3	\$45.46	0%	0%	\$156.95	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	14.27	3	\$28.86	5%	39%	\$99.64	5.52	5.81	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	3.32	3	\$28.86	5%	39%	\$99.64	1.40	1.44	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	Existing	46.00	3	\$28.86	5%	39%	\$99.64	20.91	20.91	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	Existing	31.33	3	\$28.86	5%	39%	\$99.64	14.24	14.24	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	8.49	3	\$28.86	5%	39%	\$99.64	6.66	5.44	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	3.32	12	\$1.81	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1

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Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	55.26	11	\$43.06	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Transportation Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	0.99	0.99	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	0.68	0.68	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	0.40	0.40	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	0.39	0.39	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.03	0.03	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.02	0.02	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.01	0.01	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	0.45	0.45	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.26	0.26	Building Energy Simulation Tool
Transportation Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.12	0.12	Building Energy Simulation Tool
Transportation Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.06	0.06	Building Energy Simulation Tool
Transportation Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.04	0.04	Building Energy Simulation Tool

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.12	0.12	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	1.50	1.50	AEG-BEST
Transportation Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	0.73	0.73	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.14	0.14	CHLR_VSPMP-Cooling-SCE-17_R0-86
Transportation Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	0.43	0.43	AEG-BEST
Transportation Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.08	5	\$0.40	18%	30%	\$1,293.68	0.23	0.23	AEG-BEST
Transportation Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.08	0.08	VENT_DCV-Ventilation-7PLN-v5-5
Transportation Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	2.77	2.78	HVLS-Cooling-AEG-1
Transportation Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	3.66	3.66	HVLS-Heating-AEG-1
Transportation Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.03	0.03	RTU_MNT-Cooling-PGE-R2-1
Transportation Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	0.79	0.79	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	0.54	0.54	STAT_WIFI-AII-7PLN-v2-1

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Transportation Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	0.32	0.32	STAT_WIFI-AII-7PLN-v2-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.04	15	\$0.36	22%	41%	\$992.51	7.19	7.22	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.06	15	\$0.60	22%	41%	\$1,169.75	10.06	10.11	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	0.57	0.58	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Transportation Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	0.81	0.82	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	0.56	0.57	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	0.43	0.44	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Transportation Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	0.44	0.44	CLTG_EXT_PV-Exterior Lighting-AEG-2
Transportation Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	3,703.97	20	\$1,273.44	15%	20%	\$36.88	2.40	2.40	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

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Transportation Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	5.67	15	\$5.68	20%	50%	\$122.12	0.57	0.57	RFG_FHPC-Refrigeration-RTF-v1.3-23
Transportation Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	9.06	15	\$3.97	20%	50%	\$53.42	0.90	0.90	AEG Research - prior study
Transportation Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	24.56	10	\$3.60	9%	38%	\$55.29	1.63	1.63	PUMP_EQPT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	18.42	12	\$5.49	9%	38%	(\$25.77)	1.75	1.75	PUMP_SYSOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	18.42	10	\$5.72	9%	38%	\$46.53	1.56	1.56	PUMP_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	6.45	10	\$0.65	9%	38%	\$48.38	0.43	0.43	FAN_EQPTF-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	7.62	10	\$1.07	9%	38%	\$17.76	0.64	0.64	FAN_FLOWOPT-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	11.73	10	\$5.41	9%	38%	\$69.11	0.99	0.99	FAN_VSD-Motors-UN-v1.0-5
Transportation Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	43.42	10	\$3.26	17%	50%	\$39.01	3.37	3.37	CMPAIR_EQPT-Motors-7PLN-v5-2
Transportation Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	0.43	0.43	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.02	0.02	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	49.62	10	\$5.37	9%	15%	\$16.21	0.88	0.88	E3T

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Transportation Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	9.92	10	\$2.33	9%	38%	\$2.98	0.84	0.84	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	24.81	10	\$2.34	18%	75%	\$41.91	3.30	3.30	CMPAIR_LEAK-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	18.61	15	\$14.31	26%	45%	\$93.77	1.39	1.39	CMPAIR_VSD-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.62	10	\$0.22	17%	50%	\$53.10	0.05	0.05	CMPAIR_LPDPILT-Motors-ILTRM-v4.0-1
Transportation Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	3.72	10	\$0.72	17%	50%	\$28.82	0.29	0.29	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	1.40	1.40	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Transportation Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	3.72	15	\$1.97	17%	50%	\$64.46	0.42	0.42	CMPAIR_STORAGE-Motors-UN-v1.0-3
Transportation Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	34.73	6	\$5.37	26%	45%	\$32.53	1.36	1.36	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Transportation Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	112.20	10	\$39.48	25%	45%	\$52.72	6.65	6.65	MATHAND_VSD-Material Handling-7PLN-v5-2
Transportation Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	1.66	10	\$0.70	10%	50%	\$63.27	0.98	0.98	MTR_GRWND<100HP-Motors-7PLN-v5-17
Transportation Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	0.92	10	\$0.25	6%	25%	\$40.42	0.26	0.26	MTR_GRWND>100HP-Motors-7PLN-v5-25
Transportation Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	13.80	12	\$3.07	16%	25%	\$30.51	2.19	2.19	2015-mdu-irp-report--volume-iii.pdf

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Transportation Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	3.68	10	\$0.92	16%	36%	\$37.60	0.86	0.86	DRV_SYNBELT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	16,809.48	10	\$2,090.54	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	24,595.32	15	\$5,650.42	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Transportation Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	3,556.12	10	\$604.92	0%	0%	\$25.49	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	7,950.97	1	\$54.66	0%	0%	\$6.68	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	3,082.28	2	\$14.74	0%	0%	\$2.46	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Transportation Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	37.77	15	\$18.06	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Transportation Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	26.21	15	\$3.40	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Transportation Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	35.70	15	\$4.61	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Transportation Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	39.71	10	\$397.07	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Transportation Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	16.42	15	\$0.13	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	11.20	15	\$1.07	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Transportation Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	6.80	15	\$1.29	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	6.80	15	\$4.06	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	2.05	15	\$0.45	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	4.11	15	\$2.17	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	4.11	15	\$0.04	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Transportation Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	167.76	10	\$39.46	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	173.75	10	\$2.96	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	154.00	10	\$16.68	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	23.47	10	\$12.11	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Transportation Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	18.80	10	\$3.99	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Transportation Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	18.80	10	\$1.64	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	299.57	10	\$29.45	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1

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Transportation Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.21	5	\$0.03	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Transportation Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	2.67	1	\$0.11	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	20.55	10	\$10.86	15%	15%	\$17.21	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	41.62	10	\$10.86	15%	15%	\$17.21	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	1.51	10	\$10.86	15%	15%	\$17.21	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	3.64	10	\$10.86	15%	15%	\$17.21	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	0.93	10	\$10.86	15%	15%	\$17.21	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	13.80	10	\$10.86	15%	15%	\$17.21	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Process	Transformer - High Efficiency	employee	New	9.40	10	\$10.86	15%	15%	\$17.21	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	2.50	10	\$10.86	15%	15%	\$17.21	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Transportation Equipment Mfg	Cooling	Strategic Energy Management	employee	New	59.36	3	\$21.79	3%	11%	\$28.92	0.01	0.01	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Heating	Strategic Energy Management	employee	New	120.22	3	\$21.79	3%	11%	\$28.92	0.01	0.01	IND_SEM-HVAC-AEG-1

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Transportation Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	4.36	3	\$21.79	3%	11%	\$28.92	0.01	0.01	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	10.50	3	\$21.79	3%	11%	\$28.92	0.01	0.01	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	2.69	3	\$21.79	3%	11%	\$28.92	0.00	0.00	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Motors	Strategic Energy Management	employee	New	39.86	3	\$21.79	3%	11%	\$28.92	0.05	0.05	IND_SEM-Motors-AEG-1
Transportation Equipment Mfg	Process	Strategic Energy Management	employee	New	27.15	3	\$21.79	3%	11%	\$28.92	0.03	0.03	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	7.23	3	\$21.79	3%	11%	\$28.92	0.01	0.01	IND_SEM-Process-AEG-1
Transportation Equipment Mfg	Interior Lighting	Commissioning	employee	New	12.12	3	\$45.46	5%	39%	\$159.61	0.44	0.44	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Exterior Lighting	Commissioning	employee	New	3.11	3	\$45.46	5%	39%	\$159.61	0.11	0.11	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Motors	Commissioning	employee	New	46.00	3	\$45.46	5%	39%	\$159.61	2.84	2.84	IND_SEM-HVAC-AEG-1
Transportation Equipment Mfg	Process	Commissioning	employee	New	31.33	3	\$45.46	5%	39%	\$159.61	1.94	1.94	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Miscellaneous	Commissioning	employee	New	8.34	3	\$45.46	5%	39%	\$159.61	0.31	0.26	IND_SEM-Lighting-AEG-1
Transportation Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	12.12	3	\$28.86	0%	0%	\$101.32	0.00	0.00	IND_RCX-Motors-AEG-1

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Transportation Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	3.11	3	\$28.86	0%	0%	\$101.32	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Motors	Retrocommissioning	employee	New	46.00	3	\$28.86	0%	0%	\$101.32	0.00	0.00	IND_RCX-Motors-AEG-1
Transportation Equipment Mfg	Process	Retrocommissioning	employee	New	31.33	3	\$28.86	0%	0%	\$101.32	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	8.34	3	\$28.86	0%	0%	\$101.32	0.00	0.00	IND_RCX-Process-AEG-1
Transportation Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	3.32	12	\$1.81	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Transportation Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Transportation Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	55.26	11	\$43.06	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Transportation Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Transportation Equipment Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Transportation Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Transportation Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	2.39	2.43	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	1.75	1.75	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	1.05	1.06	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	0.93	0.95	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.07	0.07	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.04	0.05	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.02	0.02	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	1.17	1.17	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	0.70	0.71	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	0.30	0.31	Building Energy Simulation Tool

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Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.16	0.16	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.10	0.10	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	0.76	0.78	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	6.37	6.49	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	3.10	3.15	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	0.57	0.59	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	2.57	2.64	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	Existing	0.10	5	\$0.40	18%	30%	\$977.15	2.75	2.82	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	0.36	0.36	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	11.14	11.41	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	15.79	15.87	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	0.79	0.81	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	4.43	4.51	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	3.24	3.25	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	1.96	1.97	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.08	15	\$0.36	7%	33%	\$639.27	23.10	24.60	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.11	15	\$0.60	7%	33%	\$753.42	32.35	34.44	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.11	0.12	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	4.27	4.36	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	4.38	4.46	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	5.15	5.36	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	7.51	7.82	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	5.13	5.34	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,510.97	20	\$863.28	15%	20%	\$36.88	15.50	15.50	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$47.88	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Wastewater	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$33.51	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,106.16	10	\$162.19	9%	38%	\$55.29	213.09	213.09	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	Existing	829.62	12	\$247.17	9%	38%	(\$25.77)	157.15	157.15	PUMP_SYSOPT-Motors-UN-v1.0-5

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Wastewater	Motors	Pumping System - Variable Speed Drive	employee	Existing	829.62	10	\$257.63	9%	38%	\$46.53	157.15	157.15	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	Existing	1,497.85	10	\$150.59	9%	38%	\$48.38	288.54	288.54	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	Existing	1,770.18	10	\$249.17	9%	38%	\$17.76	335.32	335.32	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	Existing	2,723.36	10	\$1,256.10	9%	38%	\$69.11	515.87	515.87	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	Existing	101.96	10	\$7.65	17%	50%	\$39.01	22.91	22.91	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	1.70	1.70	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.11	0.11	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	116.53	10	\$12.61	9%	15%	\$16.21	4.65	4.65	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	Existing	23.31	10	\$5.47	9%	38%	\$2.98	4.41	4.41	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	Existing	58.26	10	\$5.50	18%	75%	\$41.91	22.45	22.45	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	Existing	43.70	15	\$33.61	26%	45%	\$93.77	5.52	5.52	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.46	10	\$0.52	17%	50%	\$53.10	0.33	0.33	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	8.74	10	\$1.68	17%	50%	\$28.82	1.96	1.96	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	5.56	5.56	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	8.74	15	\$4.62	17%	50%	\$64.46	1.96	1.96	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Wastewater	Motors	Compressed Air - End Use Optimization	employee	Existing	81.57	6	\$12.62	26%	45%	\$32.53	10.30	10.30	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	Existing	243.68	10	\$85.75	25%	45%	\$52.72	32.39	32.39	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	38.07	10	\$16.07	10%	50%	\$63.27	50.60	50.60	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	21.15	10	\$5.71	6%	25%	\$40.42	13.35	13.35	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	317.22	12	\$70.56	16%	25%	\$30.51	100.15	100.15	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	Existing	84.59	10	\$21.23	16%	36%	\$37.60	57.03	57.03	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	Existing	11,395.34	10	\$1,417.20	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	Existing	16,673.45	15	\$3,830.48	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	25,626.28	10	\$604.92	0%	0%	\$3.54	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	5,390.05	1	\$54.66	0%	0%	\$9.85	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,089.51	2	\$14.74	0%	0%	\$3.62	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Wastewater	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$152.35	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	190.60	15	\$24.62	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Wastewater	Motors	Automatic Milker Takeoffs	Cows	Existing	1,788.38	10	\$17,883.82	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$1.94	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$9.02	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$10.89	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$34.21	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$6.98	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$33.66	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$0.67	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	Existing	364.34	10	\$85.70	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	377.35	10	\$6.42	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$31.05	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Wastewater	Process	Paper: Premium Control Large Material	employee	Existing	201.94	10	\$104.22	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	Existing	161.74	10	\$34.33	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	Existing	161.74	10	\$14.07	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Wastewater	Motors	Kraft: Efficient Agitator	employee	Existing	650.60	10	\$63.95	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	Existing	1.81	5	\$0.24	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.81	1	\$0.24	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	Existing	42.49	10	\$57.75	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	Existing	90.62	10	\$57.75	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	Existing	3.44	10	\$57.75	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	Existing	12.07	10	\$57.75	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.81	10	\$57.75	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	Existing	317.22	10	\$57.75	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	Existing	16.17	10	\$57.75	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	Existing	10.79	10	\$57.75	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	Existing	122.75	3	\$115.91	3%	11%	\$29.27	2.29	2.33	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	Existing	261.79	3	\$115.91	3%	11%	\$29.27	1.74	1.75	IND_SEM-HVAC-AEG-1
Wastewater	Ventilation	Strategic Energy Management	employee	Existing	9.93	3	\$115.91	3%	11%	\$29.27	1.04	1.05	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	Existing	34.87	3	\$115.91	3%	11%	\$29.27	3.21	3.38	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	Existing	8.12	3	\$115.91	3%	11%	\$29.27	0.81	0.83	IND_SEM-Lighting-AEG-1

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Wastewater	Motors	Strategic Energy Management	employee	Existing	916.41	3	\$115.91	3%	11%	\$29.27	99.13	99.13	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	Existing	46.73	3	\$115.91	3%	11%	\$29.27	5.05	5.05	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	Existing	31.18	3	\$115.91	3%	11%	\$29.27	5.82	4.75	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	Existing	40.24	3	\$553.06	0%	0%	\$166.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	Existing	9.37	3	\$553.06	0%	0%	\$166.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	Existing	1,057.40	3	\$553.06	0%	0%	\$166.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	Existing	53.91	3	\$553.06	0%	0%	\$166.23	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	Existing	35.97	3	\$553.06	0%	0%	\$166.23	0.00	0.00	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	Existing	40.24	3	\$351.09	5%	39%	\$105.53	7.41	7.79	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	Existing	9.37	3	\$351.09	5%	39%	\$105.53	1.88	1.93	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	Existing	1,057.40	3	\$351.09	5%	39%	\$105.53	228.76	228.76	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	Existing	53.91	3	\$351.09	5%	39%	\$105.53	11.66	11.66	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	Existing	35.97	3	\$351.09	5%	39%	\$105.53	13.42	10.96	IND_RCX-Process-AEG-1
Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	149.44	12	\$81.53	15%	35%	\$44.05	19.87	19.87	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	2,488.85	11	\$1,939.35	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	1.04	1.04	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	0.71	0.71	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	0.42	0.42	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	0.41	0.41	Building Energy Simulation Tool
Wastewater	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.03	0.03	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.02	0.02	Building Energy Simulation Tool
Wastewater	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.01	0.01	Building Energy Simulation Tool

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Wastewater	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	0.47	0.47	Building Energy Simulation Tool
Wastewater	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.28	0.28	Building Energy Simulation Tool
Wastewater	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.13	0.13	Building Energy Simulation Tool
Wastewater	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.07	0.07	Building Energy Simulation Tool
Wastewater	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.04	0.04	Building Energy Simulation Tool
Wastewater	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.13	0.13	AEG-BEST
Wastewater	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	1.57	1.57	AEG-BEST
Wastewater	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	0.76	0.76	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Wastewater	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.14	0.14	CHLR_VSPMP-Cooling-SCE-17_R0-86
Wastewater	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	0.45	0.45	AEG-BEST
Wastewater	Cooling	HVAC - Economizer	sqft	New	0.11	5	\$0.40	18%	30%	\$908.58	0.24	0.24	AEG-BEST
Wastewater	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.08	0.08	VENT_DCV-Ventilation-7PLN-v5-5
Wastewater	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	2.91	2.91	HVLS-Cooling-AEG-1
Wastewater	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	3.84	3.84	HVLS-Heating-AEG-1
Wastewater	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.04	0.04	RTU_MNT-Cooling-PGE-R2-1
Wastewater	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	0.83	0.83	STAT_WIFI-All-7PLN-v2-1

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Wastewater	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	0.57	0.57	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	0.33	0.33	STAT_WIFI-AII-7PLN-v2-1
Wastewater	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.06	15	\$0.36	22%	41%	\$697.06	9.48	9.53	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.09	15	\$0.60	22%	41%	\$821.54	13.27	13.34	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Wastewater	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Wastewater	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Wastewater	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Wastewater	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	0.77	0.78	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Wastewater	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	1.09	1.10	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Wastewater	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	0.75	0.77	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Wastewater	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	0.58	0.59	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Wastewater	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	0.59	0.60	CLTG_EXT_PV-Exterior Lighting-AEG-2
Wastewater	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,510.97	20	\$863.28	15%	20%	\$36.88	4.83	4.83	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Wastewater	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$47.88	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Wastewater	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$33.51	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Wastewater	Motors	Pumping System - Equipment Upgrade	employee	New	1,106.16	10	\$162.19	9%	38%	\$55.29	35.01	35.01	PUMP_EQPT-Motors-7PLN-v5-1
Wastewater	Motors	Pumping System - System Optimization	employee	New	829.62	12	\$247.17	9%	38%	(\$25.77)	37.56	37.56	PUMP_SYSOPT-Motors-UN-v1.0-5
Wastewater	Motors	Pumping System - Variable Speed Drive	employee	New	829.62	10	\$257.63	9%	38%	\$46.53	33.33	33.33	PUMP_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Fan System - Equipment Upgrade	employee	New	1,497.85	10	\$150.59	9%	38%	\$48.38	47.41	47.41	FAN_EQPTF-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Flow Optimization	employee	New	1,770.18	10	\$249.17	9%	38%	\$17.76	71.12	71.12	FAN_FLOWOPT-Motors-UN-v1.0-5
Wastewater	Motors	Fan System - Variable Speed Drive	employee	New	2,723.36	10	\$1,256.10	9%	38%	\$69.11	109.42	109.42	FAN_VSD-Motors-UN-v1.0-5
Wastewater	Motors	Compressed Air - Equipment Upgrade	employee	New	101.96	10	\$7.65	17%	50%	\$39.01	3.77	3.77	CMPAIR_EQPT-Motors-7PLN-v5-2
Wastewater	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	0.48	0.48	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.02	0.02	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	116.53	10	\$12.61	9%	15%	\$16.21	0.99	0.99	E3T
Wastewater	Motors	Compressed Air - System Controls	employee	New	23.31	10	\$5.47	9%	38%	\$2.98	0.94	0.94	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Leak Management Program	employee	New	58.26	10	\$5.50	18%	75%	\$41.91	3.69	3.69	CMPAIR_LEAK-Motors-7PLN-v5-1
Wastewater	Motors	Compressed Air - Variable Speed Drive	employee	New	43.70	15	\$33.61	26%	45%	\$93.77	1.56	1.56	CMPAIR_VSD-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.46	10	\$0.52	17%	50%	\$53.10	0.05	0.05	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Wastewater	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	8.74	10	\$1.68	17%	50%	\$28.82	0.32	0.32	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	1.56	1.56	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Wastewater	Motors	Compressed Air - Receiver Capacity Addition	employee	New	8.74	15	\$4.62	17%	50%	\$64.46	0.46	0.46	CMPAIR_STORAGE-Motors-UN-v1.0-3
Wastewater	Motors	Compressed Air - End Use Optimization	employee	New	81.57	6	\$12.62	26%	45%	\$32.53	1.51	1.51	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Wastewater	Motors	Material Handling - Variable Speed Drive	employee	New	243.68	10	\$85.75	25%	45%	\$52.72	6.87	6.87	MATHAND_VSD-Material Handling-7PLN-v5-2
Wastewater	Motors	Motors - Green Rewind (<100 HP)	employee	New	38.07	10	\$16.07	10%	50%	\$63.27	10.73	10.73	MTR_GRWND<100HP-Motors-7PLN-v5-17
Wastewater	Motors	Motors - Green Rewind (100 HP+)	employee	New	21.15	10	\$5.71	6%	25%	\$40.42	2.83	2.83	MTR_GRWND>100HP-Motors-7PLN-v5-25
Wastewater	Motors	Switch from Belt Drive to Direct Drive	employee	New	317.22	12	\$70.56	16%	25%	\$30.51	23.93	23.93	2015-mdu-irp-report--volume-iii.pdf
Wastewater	Motors	Motors - Synchronous Belts	employee	New	84.59	10	\$21.23	16%	36%	\$37.60	9.37	9.37	DRV_SYNBELT-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Engine Block Heater Controls	Unit	New	11,395.34	10	\$1,417.20	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Circulating Engine Block Heater	unit	New	16,673.45	15	\$3,830.48	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Wastewater	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	25,626.28	10	\$604.92	0%	0%	\$3.54	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Wastewater	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	5,390.05	1	\$54.66	0%	0%	\$9.85	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Wastewater	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	2,089.51	2	\$14.74	0%	0%	\$3.62	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Wastewater	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$152.35	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Wastewater	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Wastewater	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	190.60	15	\$24.62	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Wastewater	Motors	Automatic Milker Takeoffs	Cows	New	1,788.38	10	\$17,883.82	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Wastewater	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$1.94	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$9.02	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Wastewater	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$10.89	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$34.21	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$6.98	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$33.66	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Wastewater	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$0.67	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Wastewater	Motors	Panel: Hydraulic Press	employee	New	364.34	10	\$85.70	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Wastewater	Motors	Wood: Replace Pneumatic Conveyor	employee	New	377.35	10	\$6.42	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Wastewater	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$31.05	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Wastewater	Process	Paper: Premium Control Large Material	employee	New	201.94	10	\$104.22	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Wastewater	Process	Paper: Efficient Pulp Screen	employee	New	161.74	10	\$34.33	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Wastewater	Process	Kraft: Effluent Treatment System	employee	New	161.74	10	\$14.07	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Wastewater	Motors	Kraft: Efficient Agitator	employee	New	650.60	10	\$63.95	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Wastewater	Process	Mech Pulp: Premium Process	employee	New	1.81	5	\$0.24	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Wastewater	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.81	1	\$0.24	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Wastewater	Cooling	Transformer - High Efficiency	employee	New	45.27	10	\$57.75	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Heating	Transformer - High Efficiency	employee	New	91.69	10	\$57.75	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Ventilation	Transformer - High Efficiency	employee	New	3.32	10	\$57.75	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Interior Lighting	Transformer - High Efficiency	employee	New	10.25	10	\$57.75	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Exterior Lighting	Transformer - High Efficiency	employee	New	2.63	10	\$57.75	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Motors	Transformer - High Efficiency	employee	New	317.22	10	\$57.75	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Process	Transformer - High Efficiency	employee	New	16.17	10	\$57.75	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Miscellaneous	Transformer - High Efficiency	employee	New	10.61	10	\$57.75	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Wastewater	Cooling	Strategic Energy Management	employee	New	130.79	3	\$115.91	3%	11%	\$29.08	0.12	0.12	IND_SEM-HVAC-AEG-1
Wastewater	Heating	Strategic Energy Management	employee	New	264.87	3	\$115.91	3%	11%	\$29.08	0.08	0.08	IND_SEM-HVAC-AEG-1

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Wastewater	Ventilation	Strategic Energy Management	employee	New	9.60	3	\$115.91	3%	11%	\$29.08	0.05	0.05	IND_SEM-HVAC-AEG-1
Wastewater	Interior Lighting	Strategic Energy Management	employee	New	29.62	3	\$115.91	3%	11%	\$29.08	0.14	0.15	IND_SEM-Lighting-AEG-1
Wastewater	Exterior Lighting	Strategic Energy Management	employee	New	7.59	3	\$115.91	3%	11%	\$29.08	0.04	0.04	IND_SEM-Lighting-AEG-1
Wastewater	Motors	Strategic Energy Management	employee	New	916.41	3	\$115.91	3%	11%	\$29.08	4.58	4.58	IND_SEM-Motors-AEG-1
Wastewater	Process	Strategic Energy Management	employee	New	46.73	3	\$115.91	3%	11%	\$29.08	0.23	0.23	IND_SEM-Process-AEG-1
Wastewater	Miscellaneous	Strategic Energy Management	employee	New	30.64	3	\$115.91	3%	11%	\$29.08	0.25	0.18	IND_SEM-Process-AEG-1
Wastewater	Interior Lighting	Commissioning	employee	New	34.18	3	\$553.06	5%	39%	\$167.03	0.59	0.59	IND_SEM-HVAC-AEG-1
Wastewater	Exterior Lighting	Commissioning	employee	New	8.76	3	\$553.06	5%	39%	\$167.03	0.15	0.15	IND_SEM-HVAC-AEG-1
Wastewater	Motors	Commissioning	employee	New	1,057.40	3	\$553.06	5%	39%	\$167.03	31.07	31.07	IND_SEM-HVAC-AEG-1
Wastewater	Process	Commissioning	employee	New	53.91	3	\$553.06	5%	39%	\$167.03	0.32	0.32	IND_SEM-Lighting-AEG-1
Wastewater	Miscellaneous	Commissioning	employee	New	35.35	3	\$553.06	5%	39%	\$167.03	0.63	0.52	IND_SEM-Lighting-AEG-1
Wastewater	Interior Lighting	Retrocommissioning	employee	New	34.18	3	\$351.09	0%	0%	\$106.03	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Exterior Lighting	Retrocommissioning	employee	New	8.76	3	\$351.09	0%	0%	\$106.03	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Motors	Retrocommissioning	employee	New	1,057.40	3	\$351.09	0%	0%	\$106.03	0.00	0.00	IND_RCX-Motors-AEG-1
Wastewater	Process	Retrocommissioning	employee	New	53.91	3	\$351.09	0%	0%	\$106.03	0.00	0.00	IND_RCX-Process-AEG-1
Wastewater	Miscellaneous	Retrocommissioning	employee	New	35.35	3	\$351.09	0%	0%	\$106.03	0.00	0.00	IND_RCX-Process-AEG-1

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Wastewater	Motors	Municipal Sewage Treatment - Optimization	employee	New	149.44	12	\$81.53	15%	35%	\$44.05	4.75	4.75	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Wastewater	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Wastewater	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	2,488.85	11	\$1,939.35	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Wastewater	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Wastewater	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Wastewater	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	3.05	3.10	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	2.23	2.24	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	1.35	1.36	Building Energy Simulation Tool

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Water	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	1.19	1.21	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.09	0.09	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.06	0.06	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.02	0.02	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	1.49	1.49	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	0.90	0.91	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	0.38	0.39	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.21	0.21	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.13	0.13	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	0.98	0.99	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	8.13	8.27	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	3.95	4.02	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	0.73	0.75	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	3.28	3.36	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	Existing	0.20	5	\$0.40	18%	30%	\$482.68	3.51	3.60	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	0.46	0.46	VENT_DCV-Ventilation-7PLN-v5-5

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Water	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	14.21	14.56	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	20.14	20.24	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	1.00	1.03	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	5.65	5.75	STAT_WIFI-All-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	4.13	4.15	STAT_WIFI-All-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	2.49	2.52	STAT_WIFI-All-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.15	15	\$0.36	7%	33%	\$315.78	29.48	31.39	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.21	15	\$0.60	7%	33%	\$372.16	41.27	43.94	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.14	0.15	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	5.45	5.56	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	5.58	5.69	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	6.57	6.84	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	9.58	9.97	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	6.55	6.82	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	1,148.86	20	\$394.98	15%	20%	\$36.88	19.77	19.77	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	Existing	0.00	15	\$21.91	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	Existing	0.00	15	\$15.33	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	Existing	1,828.32	10	\$268.07	9%	38%	\$55.29	981.81	981.81	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	Existing	1,371.24	12	\$408.54	9%	38%	(\$25.77)	724.08	724.08	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	Existing	1,371.24	10	\$425.82	9%	38%	\$46.53	724.08	724.08	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	Existing	0.00	10	\$3.22	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	Existing	0.00	10	\$5.33	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	Existing	0.00	10	\$26.89	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	Existing	46.65	10	\$3.50	17%	50%	\$39.01	29.23	29.23	CMPAIR_EQPT-Motors-7PLN-v5-2
Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	2.16	2.16	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.15	0.15	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1

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Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	53.31	10	\$5.77	9%	15%	\$16.21	5.93	5.93	E3T
Water	Motors	Compressed Air - System Controls	employee	Existing	10.66	10	\$2.50	9%	38%	\$2.98	5.63	5.63	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	Existing	26.66	10	\$2.52	18%	75%	\$41.91	28.63	28.63	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	Existing	19.99	15	\$15.38	26%	45%	\$93.77	7.04	7.04	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	0.67	10	\$0.24	17%	50%	\$53.10	0.42	0.42	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	4.00	10	\$0.77	17%	50%	\$28.82	2.51	2.51	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	7.09	7.09	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	4.00	15	\$2.11	17%	50%	\$64.46	2.51	2.51	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	Existing	37.32	6	\$5.77	26%	45%	\$32.53	13.14	13.14	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	Existing	74.27	10	\$26.14	25%	45%	\$52.72	27.52	27.52	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	21.77	10	\$9.19	10%	50%	\$63.27	64.54	64.54	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	12.09	10	\$3.26	6%	25%	\$40.42	17.03	17.03	MTR_GRWND>100HP-Motors-7PLN-v5-25
Water	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	181.42	12	\$40.35	16%	25%	\$30.51	127.73	127.73	2015-mdu-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	Existing	48.38	10	\$12.14	16%	36%	\$37.60	72.74	72.74	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	Existing	5,213.77	10	\$648.42	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Miscellaneous	Circulating Engine Block Heater	unit	Existing	7,628.70	15	\$1,752.58	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	42,356.59	10	\$604.92	0%	0%	\$2.14	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	2,466.14	1	\$54.66	0%	0%	\$21.52	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	956.03	2	\$14.74	0%	0%	\$7.92	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	Existing	0.00	15	\$69.71	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	13.17	15	\$1.71	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	688.55	15	\$88.94	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	Existing	2,955.94	10	\$29,559.40	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	Existing	0.00	15	\$0.89	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	Existing	0.00	15	\$4.13	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	Existing	0.00	15	\$4.98	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Water	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	0.00	15	\$15.65	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	0.00	15	\$3.19	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	0.00	15	\$15.40	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	0.00	15	\$0.31	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	Existing	111.05	10	\$26.12	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	115.02	10	\$1.96	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	Existing	0.00	10	\$14.21	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	Existing	92.39	10	\$47.68	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	Existing	74.00	10	\$15.71	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	Existing	74.00	10	\$6.44	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	Existing	198.30	10	\$19.49	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	Existing	0.83	5	\$0.11	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	1.77	1	\$0.07	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	Existing	19.44	10	\$26.42	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	Existing	41.46	10	\$26.42	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Ventilation	Transformer - High Efficiency	employee	Existing	1.57	10	\$26.42	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	Existing	5.52	10	\$26.42	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.29	10	\$26.42	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Motors	Transformer - High Efficiency	employee	Existing	145.14	10	\$26.42	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	Existing	7.40	10	\$26.42	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	Existing	4.94	10	\$26.42	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	Existing	56.16	3	\$53.03	3%	11%	\$29.27	2.92	2.97	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	Existing	119.78	3	\$53.03	3%	11%	\$29.27	2.22	2.23	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	Existing	4.54	3	\$53.03	3%	11%	\$29.27	1.33	1.34	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	Existing	15.96	3	\$53.03	3%	11%	\$29.27	4.10	4.31	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	Existing	3.72	3	\$53.03	3%	11%	\$29.27	1.04	1.06	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	Existing	419.29	3	\$53.03	3%	11%	\$29.27	126.43	126.43	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	Existing	21.38	3	\$53.03	3%	11%	\$29.27	6.45	6.45	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	Existing	14.26	3	\$53.03	3%	11%	\$29.27	7.42	6.06	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	Existing	18.41	3	\$253.05	0%	0%	\$166.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	Existing	4.29	3	\$253.05	0%	0%	\$166.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	Existing	483.80	3	\$253.05	0%	0%	\$166.23	0.00	0.00	IND_SEM-HVAC-AEG-1
Water	Process	Commissioning	employee	Existing	24.67	3	\$253.05	0%	0%	\$166.23	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	Existing	16.46	3	\$253.05	0%	0%	\$166.23	0.00	0.00	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	Existing	18.41	3	\$160.64	5%	39%	\$105.53	9.45	9.94	IND_RCX-Motors-AEG-1

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Water	Exterior Lighting	Retrocommissioning	employee	Existing	4.29	3	\$160.64	5%	39%	\$105.53	2.39	2.46	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	Existing	483.80	3	\$160.64	5%	39%	\$105.53	291.77	291.77	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	Existing	24.67	3	\$160.64	5%	39%	\$105.53	14.88	14.88	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	Existing	16.46	3	\$160.64	5%	39%	\$105.53	17.12	13.98	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	247.00	12	\$134.76	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	15%	20%	\$39.32	77.73	77.73	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	4,113.72	11	\$3,205.47	15%	20%	\$112.38	381.09	381.09	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Water	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	1.33	1.33	Building Energy Simulation Tool
Water	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	0.90	0.90	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	0.53	0.53	Building Energy Simulation Tool
Water	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	0.52	0.52	Building Energy Simulation Tool
Water	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.04	0.04	Building Energy Simulation Tool
Water	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.02	0.02	Building Energy Simulation Tool
Water	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.01	0.01	Building Energy Simulation Tool
Water	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	0.60	0.60	Building Energy Simulation Tool
Water	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.35	0.35	Building Energy Simulation Tool
Water	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.16	0.16	Building Energy Simulation Tool
Water	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.08	0.08	Building Energy Simulation Tool
Water	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.05	0.05	Building Energy Simulation Tool
Water	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.17	0.17	AEG-BEST
Water	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	2.00	2.00	AEG-BEST
Water	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	0.97	0.97	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Water	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.18	0.18	CHLR_VSPMP-Cooling-SCE-17_R0-86
Water	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	0.57	0.57	AEG-BEST
Water	Cooling	HVAC - Economizer	sqft	New	0.22	5	\$0.40	18%	30%	\$448.80	0.31	0.31	AEG-BEST
Water	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.11	0.11	VENT_DCV-Ventilation-7PLN-v5-5
Water	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	3.71	3.72	HVLS-Cooling-AEG-1
Water	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	4.89	4.89	HVLS-Heating-AEG-1
Water	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.04	0.05	RTU_MNT-Cooling-PGE-R2-1
Water	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	1.06	1.06	STAT_WIFI-AII-7PLN-v2-1
Water	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	0.72	0.72	STAT_WIFI-AII-7PLN-v2-1
Water	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	0.42	0.42	STAT_WIFI-AII-7PLN-v2-1
Water	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.13	15	\$0.36	22%	41%	\$344.32	12.09	12.15	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.18	15	\$0.60	22%	41%	\$405.81	16.92	17.01	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Water	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.03	0.03	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Water	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Water	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Water	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	0.98	0.99	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Water	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	1.39	1.40	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Water	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	0.96	0.98	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Water	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	0.74	0.75	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Water	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	0.75	0.76	CLTG_EXT_PV-Exterior Lighting-AEG-2
Water	Miscellaneous	High Efficiency Battery Chargers	Unit	New	1,148.86	20	\$394.98	15%	20%	\$36.88	6.16	6.16	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Water	Process	Refrigeration - Floating Head Pressure	employee	New	0.00	15	\$21.91	20%	50%	\$0.00	0.00	0.00	RFG_FHPC-Refrigeration-RTF-v1.3-23
Water	Process	Refrigeration - System Optimization	employee	New	0.00	15	\$15.33	20%	50%	\$0.00	0.00	0.00	AEG Research - prior study
Water	Motors	Pumping System - Equipment Upgrade	employee	New	1,828.32	10	\$268.07	9%	38%	\$55.29	161.32	161.32	PUMP_EQPT-Motors-7PLN-v5-1
Water	Motors	Pumping System - System Optimization	employee	New	1,371.24	12	\$408.54	9%	38%	(\$25.77)	173.04	173.04	PUMP_SYSOPT-Motors-UN-v1.0-5
Water	Motors	Pumping System - Variable Speed Drive	employee	New	1,371.24	10	\$425.82	9%	38%	\$46.53	153.58	153.58	PUMP_VSD-Motors-UN-v1.0-3
Water	Motors	Fan System - Equipment Upgrade	employee	New	0.00	10	\$3.22	9%	38%	\$0.00	0.00	0.00	FAN_EQPTF-Motors-UN-v1.0-5
Water	Motors	Fan System - Flow Optimization	employee	New	0.00	10	\$5.33	9%	38%	\$0.00	0.00	0.00	FAN_FLOWOPT-Motors-UN-v1.0-5
Water	Motors	Fan System - Variable Speed Drive	employee	New	0.00	10	\$26.89	9%	38%	\$0.00	0.00	0.00	FAN_VSD-Motors-UN-v1.0-5
Water	Motors	Compressed Air - Equipment Upgrade	employee	New	46.65	10	\$3.50	17%	50%	\$39.01	4.80	4.80	CMPAIR_EQPT-Motors-7PLN-v5-2

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Water	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	0.61	0.61	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.02	0.02	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	53.31	10	\$5.77	9%	15%	\$16.21	1.26	1.26	E3T
Water	Motors	Compressed Air - System Controls	employee	New	10.66	10	\$2.50	9%	38%	\$2.98	1.19	1.19	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Leak Management Program	employee	New	26.66	10	\$2.52	18%	75%	\$41.91	4.70	4.70	CMPAIR_LEAK-Motors-7PLN-v5-1
Water	Motors	Compressed Air - Variable Speed Drive	employee	New	19.99	15	\$15.38	26%	45%	\$93.77	1.99	1.99	CMPAIR_VSD-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	0.67	10	\$0.24	17%	50%	\$53.10	0.07	0.07	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Water	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	4.00	10	\$0.77	17%	50%	\$28.82	0.41	0.41	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Water	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	1.99	1.99	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Water	Motors	Compressed Air - Receiver Capacity Addition	employee	New	4.00	15	\$2.11	17%	50%	\$64.46	0.59	0.59	CMPAIR_STORAGE-Motors-UN-v1.0-3
Water	Motors	Compressed Air - End Use Optimization	employee	New	37.32	6	\$5.77	26%	45%	\$32.53	1.93	1.93	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Water	Motors	Material Handling - Variable Speed Drive	employee	New	74.27	10	\$26.14	25%	45%	\$52.72	5.84	5.84	MATHAND_VSD-Material Handling-7PLN-v5-2
Water	Motors	Motors - Green Rewind (<100 HP)	employee	New	21.77	10	\$9.19	10%	50%	\$63.27	13.69	13.69	MTR_GRWND<100HP-Motors-7PLN-v5-17
Water	Motors	Motors - Green Rewind (100 HP+)	employee	New	12.09	10	\$3.26	6%	25%	\$40.42	3.61	3.61	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Water	Motors	Switch from Belt Drive to Direct Drive	employee	New	181.42	12	\$40.35	16%	25%	\$30.51	30.53	30.53	2015-mdi-irp-report--volume-iii.pdf
Water	Motors	Motors - Synchronous Belts	employee	New	48.38	10	\$12.14	16%	36%	\$37.60	11.95	11.95	DRV_SYNBELT-Motors-7PLN-v5-1
Water	Miscellaneous	Engine Block Heater Controls	Unit	New	5,213.77	10	\$648.42	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Circulating Engine Block Heater	unit	New	7,628.70	15	\$1,752.58	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Water	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	42,356.59	10	\$604.92	0%	0%	\$2.14	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Water	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	2,466.14	1	\$54.66	0%	0%	\$21.52	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Water	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	956.03	2	\$14.74	0%	0%	\$7.92	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Water	Process	Dairy - Milk Precoolers	employee	New	0.00	15	\$69.71	0%	0%	\$0.00	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Water	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	13.17	15	\$1.71	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Water	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	688.55	15	\$88.94	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Water	Motors	Automatic Milker Takeoffs	Cows	New	2,955.94	10	\$29,559.40	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Water	Process	Clean Room: Change Filter Strategy	employee	New	0.00	15	\$0.89	0%	0%	\$0.00	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Water	Process	Clean Room: Chiller Optimize	employee	New	0.00	15	\$4.13	0%	0%	\$0.00	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Water	Process	Clean Room: Clean Room HVAC	employee	New	0.00	15	\$4.98	0%	0%	\$0.00	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Water	Process	Elec Chip Fab: Solidstate Chiller	employee	New	0.00	15	\$15.65	0%	0%	\$0.00	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	0.00	15	\$3.19	0%	0%	\$0.00	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Water	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	0.00	15	\$15.40	0%	0%	\$0.00	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Water	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	0.00	15	\$0.31	0%	0%	\$0.00	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Water	Motors	Panel: Hydraulic Press	employee	New	111.05	10	\$26.12	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Water	Motors	Wood: Replace Pneumatic Conveyor	employee	New	115.02	10	\$1.96	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Water	Process	Metal: New Arc Furnace	employee	New	0.00	10	\$14.21	0%	0%	\$0.00	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Water	Process	Paper: Premium Control Large Material	employee	New	92.39	10	\$47.68	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Water	Process	Paper: Efficient Pulp Screen	employee	New	74.00	10	\$15.71	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Water	Process	Kraft: Effluent Treatment System	employee	New	74.00	10	\$6.44	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Water	Motors	Kraft: Efficient Agitator	employee	New	198.30	10	\$19.49	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Water	Process	Mech Pulp: Premium Process	employee	New	0.83	5	\$0.11	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Water	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	1.77	1	\$0.07	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Water	Cooling	Transformer - High Efficiency	employee	New	20.71	10	\$26.42	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Heating	Transformer - High Efficiency	employee	New	41.95	10	\$26.42	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Water	Ventilation	Transformer - High Efficiency	employee	New	1.52	10	\$26.42	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Interior Lighting	Transformer - High Efficiency	employee	New	4.69	10	\$26.42	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Exterior Lighting	Transformer - High Efficiency	employee	New	1.20	10	\$26.42	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Motors	Transformer - High Efficiency	employee	New	145.14	10	\$26.42	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Process	Transformer - High Efficiency	employee	New	7.40	10	\$26.42	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Miscellaneous	Transformer - High Efficiency	employee	New	4.85	10	\$26.42	15%	15%	\$17.31	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Water	Cooling	Strategic Energy Management	employee	New	59.84	3	\$53.03	3%	11%	\$29.08	0.15	0.15	IND_SEM-HVAC-AEG-1
Water	Heating	Strategic Energy Management	employee	New	121.19	3	\$53.03	3%	11%	\$29.08	0.11	0.11	IND_SEM-HVAC-AEG-1
Water	Ventilation	Strategic Energy Management	employee	New	4.39	3	\$53.03	3%	11%	\$29.08	0.06	0.06	IND_SEM-HVAC-AEG-1
Water	Interior Lighting	Strategic Energy Management	employee	New	13.55	3	\$53.03	3%	11%	\$29.08	0.18	0.19	IND_SEM-Lighting-AEG-1
Water	Exterior Lighting	Strategic Energy Management	employee	New	3.47	3	\$53.03	3%	11%	\$29.08	0.05	0.05	IND_SEM-Lighting-AEG-1
Water	Motors	Strategic Energy Management	employee	New	419.29	3	\$53.03	3%	11%	\$29.08	5.84	5.84	IND_SEM-Motors-AEG-1
Water	Process	Strategic Energy Management	employee	New	21.38	3	\$53.03	3%	11%	\$29.08	0.30	0.30	IND_SEM-Process-AEG-1
Water	Miscellaneous	Strategic Energy Management	employee	New	14.02	3	\$53.03	3%	11%	\$29.08	0.32	0.23	IND_SEM-Process-AEG-1
Water	Interior Lighting	Commissioning	employee	New	15.64	3	\$253.05	5%	39%	\$167.03	0.75	0.75	IND_SEM-HVAC-AEG-1
Water	Exterior Lighting	Commissioning	employee	New	4.01	3	\$253.05	5%	39%	\$167.03	0.19	0.19	IND_SEM-HVAC-AEG-1
Water	Motors	Commissioning	employee	New	483.80	3	\$253.05	5%	39%	\$167.03	31.72	31.72	IND_SEM-HVAC-AEG-1

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Water	Process	Commissioning	employee	New	24.67	3	\$253.05	5%	39%	\$167.03	0.40	0.40	IND_SEM-Lighting-AEG-1
Water	Miscellaneous	Commissioning	employee	New	16.18	3	\$253.05	5%	39%	\$167.03	0.80	0.67	IND_SEM-Lighting-AEG-1
Water	Interior Lighting	Retrocommissioning	employee	New	15.64	3	\$160.64	0%	0%	\$106.03	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Exterior Lighting	Retrocommissioning	employee	New	4.01	3	\$160.64	0%	0%	\$106.03	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Motors	Retrocommissioning	employee	New	483.80	3	\$160.64	0%	0%	\$106.03	0.00	0.00	IND_RCX-Motors-AEG-1
Water	Process	Retrocommissioning	employee	New	24.67	3	\$160.64	0%	0%	\$106.03	0.00	0.00	IND_RCX-Process-AEG-1
Water	Miscellaneous	Retrocommissioning	employee	New	16.18	3	\$160.64	0%	0%	\$106.03	0.00	0.00	IND_RCX-Process-AEG-1
Water	Motors	Municipal Sewage Treatment - Optimization	employee	New	247.00	12	\$134.76	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Water	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	15%	20%	\$39.32	18.58	18.58	WSUPPLY_OPT-Process-7PLN-v6-1
Water	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	4,113.72	11	\$3,205.47	15%	20%	\$112.38	85.95	85.95	WWTP_PULSAIRMIX-Motors-AEG-1
Water	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Water	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Water	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Water	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	48.63	49.45	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	35.57	35.69	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	21.46	21.65	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	18.96	19.28	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	1.50	1.51	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.91	0.92	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.37	0.38	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	23.71	23.79	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	14.30	14.43	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	6.11	6.22	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	3.34	3.35	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	2.02	2.03	Building Energy Simulation Tool

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Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	15.56	15.84	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	129.68	131.96	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	62.96	64.07	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	11.67	11.96	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	52.35	53.64	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	Existing	36.77	5	\$0.40	18%	30%	\$2.68	56.03	57.46	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	7.29	7.39	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	226.68	232.18	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	321.18	322.88	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	15.97	16.45	RTU_MNT-Cooling-PGE-R2-1
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	90.15	91.68	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	65.95	66.18	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	39.78	40.14	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	27.46	15	\$0.36	7%	33%	\$1.75	320.50	341.23	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	38.44	15	\$0.60	7%	33%	\$2.06	448.70	477.73	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1

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Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	1.53	1.66	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	59.34	60.52	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	60.76	61.97	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	71.50	74.44	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	104.26	108.55	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	71.27	74.21	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	125,482.30	20	\$43,141.40	15%	20%	\$36.88	267.39	267.39	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	2,427.20	15	\$2,431.83	20%	50%	\$122.12	210.57	210.57	RFG_FHPC-Refrigeration-RTF-v1.3-23
Chemical Mfg	Process	Refrigeration - System Optimization	employee	Existing	3,883.53	15	\$1,702.01	20%	50%	\$53.42	336.90	336.90	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	27,389.15	10	\$4,015.84	9%	38%	\$55.29	2,276.23	2,276.23	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	Existing	20,541.86	12	\$6,120.14	9%	38%	(\$25.77)	1,678.71	1,678.71	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	20,541.86	10	\$6,379.01	9%	38%	\$46.53	1,678.71	1,678.71	PUMP_VSD-Motors-UN-v1.0-3

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	6,883.56	10	\$692.08	9%	38%	\$48.38	572.07	572.07	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	Existing	8,135.12	10	\$1,145.07	9%	38%	\$17.76	664.81	664.81	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	12,515.57	10	\$5,772.60	9%	38%	\$69.11	1,022.79	1,022.79	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	50,787.82	10	\$3,812.65	17%	50%	\$39.01	4,924.30	4,924.30	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	364.54	364.54	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	24.44	24.44	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	58,043.22	10	\$6,279.53	9%	15%	\$16.21	998.60	998.60	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	Existing	11,608.64	10	\$2,726.05	9%	38%	\$2.98	948.67	948.67	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	29,021.61	10	\$2,740.35	18%	75%	\$41.91	4,823.80	4,823.80	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	21,766.21	15	\$16,744.14	26%	45%	\$93.77	1,185.84	1,185.84	CMPAIR_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	725.54	10	\$257.12	17%	50%	\$53.10	70.35	70.35	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	4,353.24	10	\$837.21	17%	50%	\$28.82	422.08	422.08	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	1,194.70	1,194.70	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	4,353.24	15	\$2,302.32	17%	50%	\$64.46	422.08	422.08	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	40,630.25	6	\$6,287.13	26%	45%	\$32.53	2,213.57	2,213.57	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	24,627.22	10	\$8,666.12	25%	45%	\$52.72	1,412.33	1,412.33	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	888.07	10	\$375.01	10%	50%	\$63.27	509.30	509.30	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	493.37	10	\$133.10	6%	25%	\$40.42	134.40	134.40	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	7,400.62	12	\$1,646.13	16%	25%	\$30.51	1,007.98	1,007.98	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	Existing	1,973.50	10	\$495.22	16%	36%	\$37.60	574.04	574.04	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	569,467.49	10	\$70,822.92	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	833,234.03	15	\$191,423.41	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	793,153.96	10	\$604.92	0%	0%	\$0.11	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	269,361.06	1	\$54.66	0%	0%	\$0.20	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	104,420.67	2	\$14.74	0%	0%	\$0.07	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	Existing	16,181.36	15	\$7,738.29	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	10.36	15	\$1.34	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	92.92	15	\$12.00	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	44,281.47	10	\$442,814.74	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	66,245.82	15	\$504.07	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	4,797.07	15	\$458.22	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	2,912.65	15	\$553.12	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	2,912.65	15	\$1,737.35	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	8,280.73	15	\$1,813.52	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	16,561.46	15	\$8,747.94	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	16,561.46	15	\$175.42	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	Existing	36,821.17	10	\$8,660.92	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	38,136.21	10	\$648.62	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Metal: New Arc Furnace	employee	Existing	25,951.63	10	\$2,810.50	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	Existing	11,173.32	10	\$5,766.64	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	8,949.48	10	\$1,899.55	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	8,949.48	10	\$778.77	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	65,752.09	10	\$6,463.02	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	Existing	100.18	5	\$13.32	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	586.93	1	\$24.65	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	Existing	2,003.54	10	\$2,240.14	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	Existing	4,273.01	10	\$2,240.14	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	162.03	10	\$2,240.14	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	388.53	10	\$2,240.14	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	90.51	10	\$2,240.14	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	Existing	7,400.62	10	\$2,240.14	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	Existing	4,474.74	10	\$2,240.14	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	431.46	10	\$2,240.14	15%	15%	\$17.42	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	Existing	5,787.99	3	\$4,495.84	3%	11%	\$29.27	5.49	5.58	IND_SEM-HVAC-AEG-1
Chemical Mfg	Heating	Strategic Energy Management	employee	Existing	12,344.25	3	\$4,495.84	3%	11%	\$29.27	4.17	4.19	IND_SEM-HVAC-AEG-1
Chemical Mfg	Ventilation	Strategic Energy Management	employee	Existing	468.09	3	\$4,495.84	3%	11%	\$29.27	2.50	2.52	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	1,122.41	3	\$4,495.84	3%	11%	\$29.27	5.25	5.52	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	261.48	3	\$4,495.84	3%	11%	\$29.27	1.33	1.36	IND_SEM-Lighting-AEG-1

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Chemical Mfg	Motors	Strategic Energy Management	employee	Existing	21,379.56	3	\$4,495.84	3%	11%	\$29.27	117.38	117.38	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	Existing	12,927.01	3	\$4,495.84	3%	11%	\$29.27	70.97	70.97	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	1,246.43	3	\$4,495.84	3%	11%	\$29.27	11.80	9.64	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	Existing	1,295.08	3	\$19,615.74	0%	0%	\$165.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	Existing	301.71	3	\$19,615.74	0%	0%	\$165.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	Existing	24,668.74	3	\$19,615.74	0%	0%	\$165.30	0.00	0.00	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	Existing	14,915.79	3	\$19,615.74	0%	0%	\$165.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	Existing	1,438.19	3	\$19,615.74	0%	0%	\$165.30	0.00	0.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	Existing	1,295.08	3	\$12,452.46	5%	39%	\$104.93	102.89	108.23	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	301.71	3	\$12,452.46	5%	39%	\$104.93	26.05	26.75	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	Existing	24,668.74	3	\$12,452.46	5%	39%	\$104.93	2,302.43	2,302.43	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	Existing	14,915.79	3	\$12,452.46	5%	39%	\$104.93	1,392.15	1,392.15	IND_RCX-Process-AEG-1
Chemical Mfg	Miscellaneous	Retrocommissioning	employee	Existing	1,438.19	3	\$12,452.46	5%	39%	\$104.93	231.48	189.09	IND_RCX-Process-AEG-1
Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	3,700.26	12	\$2,018.84	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1

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Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	61,625.58	11	\$48,019.54	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	21.17	21.20	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	14.43	14.43	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	8.46	8.46	Building Energy Simulation Tool
Chemical Mfg	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	8.25	8.26	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.61	0.61	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.36	0.36	Building Energy Simulation Tool

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Chemical Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.16	0.16	Building Energy Simulation Tool
Chemical Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	9.62	9.62	Building Energy Simulation Tool
Chemical Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	5.64	5.64	Building Energy Simulation Tool
Chemical Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	2.62	2.62	Building Energy Simulation Tool
Chemical Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	1.33	1.33	Building Energy Simulation Tool
Chemical Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.78	0.78	Building Energy Simulation Tool
Chemical Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	2.66	2.66	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	31.90	31.90	AEG-BEST
Chemical Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	15.49	15.49	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Chemical Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	2.91	2.91	CHLR_VSPMP-Cooling-SCE-17_R0-86
Chemical Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	9.09	9.09	AEG-BEST
Chemical Mfg	Cooling	HVAC - Economizer	sqft	New	39.02	5	\$0.40	18%	30%	\$2.49	4.95	4.97	AEG-BEST
Chemical Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	1.70	1.70	VENT_DCV-Ventilation-7PLN-v5-5
Chemical Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	59.14	59.29	HVLS-Cooling-AEG-1
Chemical Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	78.05	78.05	HVLS-Heating-AEG-1
Chemical Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.72	0.72	RTU_MNT-Cooling-PGE-R2-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	16.90	16.94	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	11.52	11.52	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	6.75	6.75	STAT_WIFI-AII-7PLN-v2-1
Chemical Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	23.19	15	\$0.36	22%	41%	\$1.91	131.82	132.48	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	32.47	15	\$0.60	22%	41%	\$2.25	184.55	185.47	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Chemical Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.33	0.33	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Chemical Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Chemical Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Chemical Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	10.68	10.78	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Chemical Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	15.13	15.25	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	10.48	10.64	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Chemical Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	8.04	8.17	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Chemical Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	8.15	8.29	CLTG_EXT_PV-Exterior Lighting-AEG-2
Chemical Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	125,482.30	20	\$43,141.40	15%	20%	\$36.88	83.29	83.29	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Chemical Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	2,427.20	15	\$2,431.83	20%	50%	\$122.12	49.71	49.71	RFG_FHPC-Refrigeration-RTF-v1.3-23
Chemical Mfg	Process	Refrigeration - System Optimization	employee	New	3,883.53	15	\$1,702.01	20%	50%	\$53.42	79.54	79.54	AEG Research - prior study
Chemical Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	27,389.15	10	\$4,015.84	9%	38%	\$55.29	374.00	374.00	PUMP_EQPT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Pumping System - System Optimization	employee	New	20,541.86	12	\$6,120.14	9%	38%	(\$25.77)	401.17	401.17	PUMP_SYSOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	20,541.86	10	\$6,379.01	9%	38%	\$46.53	356.07	356.07	PUMP_VSD-Motors-UN-v1.0-3
Chemical Mfg	Motors	Fan System - Equipment Upgrade	employee	New	6,883.56	10	\$692.08	9%	38%	\$48.38	94.00	94.00	FAN_EQPTF-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Flow Optimization	employee	New	8,135.12	10	\$1,145.07	9%	38%	\$17.76	141.01	141.01	FAN_FLOWOPT-Motors-UN-v1.0-5
Chemical Mfg	Motors	Fan System - Variable Speed Drive	employee	New	12,515.57	10	\$5,772.60	9%	38%	\$69.11	216.94	216.94	FAN_VSD-Motors-UN-v1.0-5
Chemical Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	50,787.82	10	\$3,812.65	17%	50%	\$39.01	809.10	809.10	CMPAIR_EQPT-Motors-7PLN-v5-2
Chemical Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	102.96	102.96	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	4.02	4.02	CMPAIR_RFRGRDYMotors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	58,043.22	10	\$6,279.53	9%	15%	\$16.21	211.81	211.81	E3T
Chemical Mfg	Motors	Compressed Air - System Controls	employee	New	11,608.64	10	\$2,726.05	9%	38%	\$2.98	201.22	201.22	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Leak Management Program	employee	New	29,021.61	10	\$2,740.35	18%	75%	\$41.91	792.59	792.59	CMPAIR_LEAK-Motors-7PLN-v5-1
Chemical Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	21,766.21	15	\$16,744.14	26%	45%	\$93.77	334.92	334.92	CMPAIR_VSD-Motors-UN-v1.0-3

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Chemical Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	725.54	10	\$257.12	17%	50%	\$53.10	11.56	11.56	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Chemical Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	4,353.24	10	\$837.21	17%	50%	\$28.82	69.35	69.35	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	335.97	335.97	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Chemical Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	4,353.24	15	\$2,302.32	17%	50%	\$64.46	99.65	99.65	CMPAIR_STORAGE-Motors-UN-v1.0-3
Chemical Mfg	Motors	Compressed Air - End Use Optimization	employee	New	40,630.25	6	\$6,287.13	26%	45%	\$32.53	325.49	325.49	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Chemical Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	24,627.22	10	\$8,666.12	25%	45%	\$52.72	299.57	299.57	MATHAND_VSD-Material Handling-7PLN-v5-2
Chemical Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	888.07	10	\$375.01	10%	50%	\$63.27	108.03	108.03	MTR_GRWND<100HP-Motors-7PLN-v5-17
Chemical Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	493.37	10	\$133.10	6%	25%	\$40.42	28.51	28.51	MTR_GRWND>100HP-Motors-7PLN-v5-25
Chemical Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	7,400.62	12	\$1,646.13	16%	25%	\$30.51	240.89	240.89	2015-mdu-irp-report--volume-iii.pdf
Chemical Mfg	Motors	Motors - Synchronous Belts	employee	New	1,973.50	10	\$495.22	16%	36%	\$37.60	94.32	94.32	DRV_SYNBELT-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	569,467.49	10	\$70,822.92	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	833,234.03	15	\$191,423.41	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Chemical Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	793,153.96	10	\$604.92	0%	0%	\$0.11	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Chemical Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	269,361.06	1	\$54.66	0%	0%	\$0.20	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1

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Chemical Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	104,420.67	2	\$14.74	0%	0%	\$0.07	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Chemical Mfg	Process	Dairy - Milk Precoolers	employee	New	16,181.36	15	\$7,738.29	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Chemical Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	10.36	15	\$1.34	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Chemical Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	92.92	15	\$12.00	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Chemical Mfg	Motors	Automatic Milker Takeoffs	Cows	New	44,281.47	10	\$442,814.74	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Chemical Mfg	Process	Clean Room: Change Filter Strategy	employee	New	66,245.82	15	\$504.07	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Chiller Optimize	employee	New	4,797.07	15	\$458.22	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Chemical Mfg	Process	Clean Room: Clean Room HVAC	employee	New	2,912.65	15	\$553.12	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	2,912.65	15	\$1,737.35	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	8,280.73	15	\$1,813.52	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	16,561.46	15	\$8,747.94	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Chemical Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	16,561.46	15	\$175.42	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Chemical Mfg	Motors	Panel: Hydraulic Press	employee	New	36,821.17	10	\$8,660.92	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Chemical Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	38,136.21	10	\$648.62	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1

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Chemical Mfg	Process	Metal: New Arc Furnace	employee	New	25,951.6 ₃	10	\$2,810.50	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Chemical Mfg	Process	Paper: Premium Control Large Material	employee	New	11,173.3 ₂	10	\$5,766.64	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Chemical Mfg	Process	Paper: Efficient Pulp Screen	employee	New	8,949.48	10	\$1,899.55	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Chemical Mfg	Process	Kraft: Effluent Treatment System	employee	New	8,949.48	10	\$778.77	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Chemical Mfg	Motors	Kraft: Efficient Agitator	employee	New	65,752.0 ₉	10	\$6,463.02	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Chemical Mfg	Process	Mech Pulp: Premium Process	employee	New	100.18	5	\$13.32	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Chemical Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	586.93	1	\$24.65	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Chemical Mfg	Cooling	Transformer - High Efficiency	employee	New	2,134.78	10	\$2,240.14	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Heating	Transformer - High Efficiency	employee	New	4,323.26	10	\$2,240.14	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Ventilation	Transformer - High Efficiency	employee	New	156.73	10	\$2,240.14	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	330.00	10	\$2,240.14	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	84.57	10	\$2,240.14	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Motors	Transformer - High Efficiency	employee	New	7,400.62	10	\$2,240.14	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Process	Transformer - High Efficiency	employee	New	4,474.74	10	\$2,240.14	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	424.01	10	\$2,240.14	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Chemical Mfg	Cooling	Strategic Energy Management	employee	New	6,167.12	3	\$4,495.84	3%	11%	\$29.01	0.28	0.28	IND_SEM-HVAC-AEG-1

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Chemical Mfg	Heating	Strategic Energy Management	employee	New	12,489.41	3	\$4,495.84	3%	11%	\$29.01	0.20	0.20	IND_SEM-HVAC-AEG-1
Chemical Mfg	Ventilation	Strategic Energy Management	employee	New	452.76	3	\$4,495.84	3%	11%	\$29.01	0.11	0.11	IND_SEM-HVAC-AEG-1
Chemical Mfg	Interior Lighting	Strategic Energy Management	employee	New	953.35	3	\$4,495.84	3%	11%	\$29.01	0.23	0.24	IND_SEM-Lighting-AEG-1
Chemical Mfg	Exterior Lighting	Strategic Energy Management	employee	New	244.32	3	\$4,495.84	3%	11%	\$29.01	0.06	0.06	IND_SEM-Lighting-AEG-1
Chemical Mfg	Motors	Strategic Energy Management	employee	New	21,379.56	3	\$4,495.84	3%	11%	\$29.01	5.42	5.42	IND_SEM-Motors-AEG-1
Chemical Mfg	Process	Strategic Energy Management	employee	New	12,927.01	3	\$4,495.84	3%	11%	\$29.01	3.28	3.28	IND_SEM-Process-AEG-1
Chemical Mfg	Miscellaneous	Strategic Energy Management	employee	New	1,224.91	3	\$4,495.84	3%	11%	\$29.01	0.50	0.37	IND_SEM-Process-AEG-1
Chemical Mfg	Interior Lighting	Commissioning	employee	New	1,100.02	3	\$19,615.74	5%	39%	\$166.09	8.12	8.19	IND_SEM-HVAC-AEG-1
Chemical Mfg	Exterior Lighting	Commissioning	employee	New	281.91	3	\$19,615.74	5%	39%	\$166.09	2.09	2.12	IND_SEM-HVAC-AEG-1
Chemical Mfg	Motors	Commissioning	employee	New	24,668.74	3	\$19,615.74	5%	39%	\$166.09	312.40	312.40	IND_SEM-HVAC-AEG-1
Chemical Mfg	Process	Commissioning	employee	New	14,915.79	3	\$19,615.74	5%	39%	\$166.09	188.89	188.89	IND_SEM-Lighting-AEG-1
Chemical Mfg	Miscellaneous	Commissioning	employee	New	1,413.36	3	\$19,615.74	5%	39%	\$166.09	10.84	9.00	IND_SEM-Lighting-AEG-1
Chemical Mfg	Interior Lighting	Retrocommissioning	employee	New	1,100.02	3	\$12,452.46	0%	0%	\$105.44	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Exterior Lighting	Retrocommissioning	employee	New	281.91	3	\$12,452.46	0%	0%	\$105.44	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Motors	Retrocommissioning	employee	New	24,668.74	3	\$12,452.46	0%	0%	\$105.44	0.00	0.00	IND_RCX-Motors-AEG-1
Chemical Mfg	Process	Retrocommissioning	employee	New	14,915.79	3	\$12,452.46	0%	0%	\$105.44	0.00	0.00	IND_RCX-Process-AEG-1

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Chemical Mfg	Miscellaneous	Retrocommissioning	employee	New	1,413.36	3	\$12,452.46	0%	0%	\$105.44	0.00	0.00	IND_RCX-Process-AEG-1
Chemical Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	3,700.26	12	\$2,018.84	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Chemical Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Chemical Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	61,625.58	11	\$48,019.54	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Chemical Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Chemical Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Chemical Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	8.50	8.64	Building Energy Simulation Tool

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Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	6.22	6.24	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	3.75	3.78	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	3.31	3.37	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.26	0.26	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.16	0.16	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.07	0.07	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	4.14	4.16	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	2.50	2.52	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	1.07	1.09	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.58	0.59	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.35	0.36	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	2.72	2.77	AEG-BEST

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Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	22.66	23.06	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	11.00	11.20	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	2.04	2.09	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	9.15	9.38	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.30	5	\$0.40	18%	30%	\$328.17	9.79	10.04	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	1.27	1.29	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	39.62	40.58	HVLS-Cooling-AEG-1
Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	56.13	56.43	HVLS-Heating-AEG-1
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	2.79	2.87	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	15.76	16.02	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	11.53	11.57	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	6.95	7.02	STAT_WIFI-AII-7PLN-v2-1

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Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.22	15	\$0.36	7%	33%	\$214.69	36.34	38.69	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.31	15	\$0.60	7%	33%	\$253.03	50.88	54.16	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.17	0.19	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	6.72	6.85	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	6.88	7.02	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	8.10	8.43	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	11.81	12.29	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	8.07	8.40	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,772.71	20	\$953.27	15%	20%	\$36.88	29.24	29.24	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	24.89	15	\$24.94	20%	50%	\$122.12	10.69	10.69	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	Existing	39.82	15	\$17.45	20%	50%	\$53.42	17.10	17.10	AEG Research - prior study
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	18.93	10	\$2.78	9%	38%	\$55.29	7.78	7.78	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	Existing	14.20	12	\$4.23	9%	38%	(\$25.77)	5.74	5.74	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	14.20	10	\$4.41	9%	38%	\$46.53	5.74	5.74	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	16.66	10	\$1.67	9%	38%	\$48.38	6.85	6.85	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	Existing	19.68	10	\$2.77	9%	38%	\$17.76	7.96	7.96	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	30.28	10	\$13.97	9%	38%	\$69.11	12.25	12.25	FAN_VSD-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	95.88	10	\$7.20	17%	50%	\$39.01	46.00	46.00	CMPAIR_EQPT-Motors-7PLN-v5-2
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	3.41	3.41	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.23	0.23	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	109.57	10	\$11.85	9%	15%	\$16.21	9.33	9.33	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	Existing	21.91	10	\$5.15	9%	38%	\$2.98	8.86	8.86	CMPAIR_SYSCTRL-Motors-UN-v1.0-3

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Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	54.79	10	\$5.17	18%	75%	\$41.91	45.07	45.07	CMPAIR_LEAK-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	41.09	15	\$31.61	26%	45%	\$93.77	11.08	11.08	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.37	10	\$0.49	17%	50%	\$53.10	0.66	0.66	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	8.22	10	\$1.58	17%	50%	\$28.82	3.94	3.94	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	11.16	11.16	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	8.22	15	\$4.35	17%	50%	\$64.46	3.94	3.94	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	76.70	6	\$11.87	26%	45%	\$32.53	20.68	20.68	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	160.39	10	\$56.44	25%	45%	\$52.72	45.52	45.52	MATHAND_VSD-Material Handling-7PLN-v5-2
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	3.10	10	\$1.31	10%	50%	\$63.27	7.03	7.03	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	1.72	10	\$0.46	6%	25%	\$40.42	1.86	1.86	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	25.81	12	\$5.74	16%	25%	\$30.51	13.92	13.92	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	Existing	6.88	10	\$1.73	16%	36%	\$37.60	7.93	7.93	DRV_SYNBELT-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	12,583.21	10	\$1,564.94	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	18,411.52	15	\$4,229.78	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	548.10	10	\$604.92	0%	0%	\$165.36	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	5,951.92	1	\$54.66	0%	0%	\$8.92	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,307.33	2	\$14.74	0%	0%	\$3.28	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	Existing	165.93	15	\$79.35	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	22.33	15	\$2.90	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	6.26	15	\$0.81	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	30.60	10	\$306.00	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	49.88	15	\$0.38	15%	75%	\$0.93	42.47	42.47	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	49.19	15	\$4.70	15%	75%	\$11.64	41.88	41.88	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	29.87	15	\$5.67	15%	75%	\$23.15	25.43	25.43	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	29.87	15	\$17.82	15%	75%	(\$68.49)	25.86	25.86	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	6.24	15	\$1.37	15%	75%	\$26.69	5.40	5.40	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	12.47	15	\$6.59	15%	75%	(\$89.91)	10.80	10.80	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	12.47	15	\$0.13	15%	75%	(\$14.88)	10.80	10.80	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	Existing	239.80	10	\$56.41	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	248.37	10	\$4.22	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	Existing	321.57	10	\$34.83	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	Existing	79.80	10	\$41.18	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	63.91	10	\$13.57	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	63.91	10	\$5.56	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	428.22	10	\$42.09	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.72	5	\$0.10	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1

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Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	3.82	1	\$0.16	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	Existing	70.76	10	\$35.05	15%	15%	\$17.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	Existing	150.91	10	\$35.05	15%	15%	\$17.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	5.72	10	\$35.05	15%	15%	\$17.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	8.89	10	\$35.05	15%	15%	\$17.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	2.07	10	\$35.05	15%	15%	\$17.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	Existing	20.65	10	\$35.05	15%	15%	\$17.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	Existing	31.96	10	\$35.05	15%	15%	\$17.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	9.53	10	\$35.05	15%	15%	\$17.47	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	Existing	204.42	3	\$70.34	3%	11%	\$29.36	8.15	8.29	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	Existing	435.97	3	\$70.34	3%	11%	\$29.36	6.20	6.22	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	Existing	16.53	3	\$70.34	3%	11%	\$29.36	3.72	3.75	IND_SEM-HVAC-AEG-1

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Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	25.68	3	\$70.34	3%	11%	\$29.36	5.05	5.31	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	5.98	3	\$70.34	3%	11%	\$29.36	1.28	1.31	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	Existing	59.65	3	\$70.34	3%	11%	\$29.36	13.77	13.77	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	Existing	92.32	3	\$70.34	3%	11%	\$29.36	21.32	21.32	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	27.54	3	\$70.34	3%	11%	\$29.36	10.97	8.96	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	Existing	29.63	3	\$101.44	0%	0%	\$145.85	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	Existing	6.90	3	\$101.44	0%	0%	\$145.85	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Motors	Commissioning	employee	Existing	68.82	3	\$101.44	0%	0%	\$145.85	0.00	0.00	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Process	Commissioning	employee	Existing	106.52	3	\$101.44	0%	0%	\$145.85	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	Existing	31.78	3	\$101.44	0%	0%	\$145.85	0.00	0.00	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	Existing	29.63	3	\$64.40	5%	39%	\$92.59	11.65	12.26	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	6.90	3	\$64.40	5%	39%	\$92.59	2.95	3.03	IND_RCX-Motors-AEG-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	Existing	68.82	3	\$64.40	5%	39%	\$92.59	31.79	31.79	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Process	Retrocommissioning	employee	Existing	106.52	3	\$64.40	5%	39%	\$92.59	49.20	49.20	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	Existing	31.78	3	\$64.40	5%	39%	\$92.59	25.31	20.68	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	2.56	12	\$1.40	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	42.59	11	\$33.18	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	WHP - ORC	employee	Existing	70.03	20	\$35.02	0%	91%	\$32.42	247.17	247.17	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	Existing	86.72	20	\$35.02	0%	91%	\$32.42	382.58	382.58	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	3.70	3.70	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	2.52	2.52	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	1.48	1.48	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	1.44	1.44	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.11	0.11	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.06	0.06	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.03	0.03	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	1.68	1.68	Building Energy Simulation Tool

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Electronic Equipment Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.99	0.99	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.46	0.46	Building Energy Simulation Tool
Electronic Equipment Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.23	0.23	Building Energy Simulation Tool
Electronic Equipment Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.14	0.14	Building Energy Simulation Tool
Electronic Equipment Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.47	0.47	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	5.58	5.58	AEG-BEST
Electronic Equipment Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	2.71	2.71	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.51	0.51	CHLR_VSPMP-Cooling-SCE-17_R0-86
Electronic Equipment Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	1.59	1.59	AEG-BEST
Electronic Equipment Mfg	Cooling	HVAC - Economizer	sqft	New	0.32	5	\$0.40	18%	30%	\$305.14	0.86	0.87	AEG-BEST
Electronic Equipment Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.30	0.30	VENT_DCV-Ventilation-7PLN-v5-5
Electronic Equipment Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	10.34	10.36	HVLS-Cooling-AEG-1

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Electronic Equipment Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	13.64	13.64	HVLS-Heating-AEG-1
Electronic Equipment Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.13	0.13	RTU_MNT-Cooling-PGE-R2-1
Electronic Equipment Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	2.95	2.96	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	2.01	2.01	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	1.18	1.18	STAT_WIFI-AII-7PLN-v2-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.19	15	\$0.36	22%	41%	\$234.10	14.90	14.98	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.26	15	\$0.60	22%	41%	\$275.91	20.86	20.97	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.04	0.04	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	1.21	1.22	CLTG_DLMpa-Interior Lighting-ILTRM-v4.0-1
Electronic Equipment Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	1.71	1.73	CLTG_BILVL-Interior Lighting-7PLN-v3-1

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Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	1.19	1.21	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	0.91	0.92	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Electronic Equipment Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	0.92	0.94	CLTG_EXT_PV-Exterior Lighting-AEG-2
Electronic Equipment Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,772.71	20	\$953.27	15%	20%	\$36.88	9.11	9.11	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Electronic Equipment Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	24.89	15	\$24.94	20%	50%	\$122.12	2.52	2.52	RFG_FHPC-Refrigeration-RTF-v1.3-23
Electronic Equipment Mfg	Process	Refrigeration - System Optimization	employee	New	39.82	15	\$17.45	20%	50%	\$53.42	4.04	4.04	AEG Research - prior study
Electronic Equipment Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	18.93	10	\$2.78	9%	38%	\$55.29	1.28	1.28	PUMP_EQPT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Pumping System - System Optimization	employee	New	14.20	12	\$4.23	9%	38%	(\$25.77)	1.37	1.37	PUMP_SYSOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	14.20	10	\$4.41	9%	38%	\$46.53	1.22	1.22	PUMP_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Fan System - Equipment Upgrade	employee	New	16.66	10	\$1.67	9%	38%	\$48.38	1.13	1.13	FAN_EQPTF-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Flow Optimization	employee	New	19.68	10	\$2.77	9%	38%	\$17.76	1.69	1.69	FAN_FLOWOPT-Motors-UN-v1.0-5
Electronic Equipment Mfg	Motors	Fan System - Variable Speed Drive	employee	New	30.28	10	\$13.97	9%	38%	\$69.11	2.60	2.60	FAN_VSD-Motors-UN-v1.0-5

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Electronic Equipment Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	95.88	10	\$7.20	17%	50%	\$39.01	7.56	7.56	CMPAIR_EQPT-Motors-7PLN-v5-2
Electronic Equipment Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	0.96	0.96	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.04	0.04	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	109.57	10	\$11.85	9%	15%	\$16.21	1.98	1.98	E3T
Electronic Equipment Mfg	Motors	Compressed Air - System Controls	employee	New	21.91	10	\$5.15	9%	38%	\$2.98	1.88	1.88	CMPAIR_SYSCCTRL-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Leak Management Program	employee	New	54.79	10	\$5.17	18%	75%	\$41.91	7.40	7.40	CMPAIR_LEAK-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	41.09	15	\$31.61	26%	45%	\$93.77	3.13	3.13	CMPAIR_VSD-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.37	10	\$0.49	17%	50%	\$53.10	0.11	0.11	CMPAIR_LPDPFILT-Motors-ILTRM-v4.0-1
Electronic Equipment Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	8.22	10	\$1.58	17%	50%	\$28.82	0.65	0.65	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	3.14	3.14	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Electronic Equipment Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	8.22	15	\$4.35	17%	50%	\$64.46	0.93	0.93	CMPAIR_STORAGE-Motors-UN-v1.0-3
Electronic Equipment Mfg	Motors	Compressed Air - End Use Optimization	employee	New	76.70	6	\$11.87	26%	45%	\$32.53	3.04	3.04	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1

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Electronic Equipment Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	160.39	10	\$56.44	25%	45%	\$52.72	9.65	9.65	MATHAND_VSD-Material Handling-7PLN-v5-2
Electronic Equipment Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	3.10	10	\$1.31	10%	50%	\$63.27	1.49	1.49	MTR_GRWND<100HP-Motors-7PLN-v5-17
Electronic Equipment Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	1.72	10	\$0.46	6%	25%	\$40.42	0.39	0.39	MTR_GRWND>100HP-Motors-7PLN-v5-25
Electronic Equipment Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	25.81	12	\$5.74	16%	25%	\$30.51	3.33	3.33	2015-mdu-irp-report--volume-iii.pdf
Electronic Equipment Mfg	Motors	Motors - Synchronous Belts	employee	New	6.88	10	\$1.73	16%	36%	\$37.60	1.30	1.30	DRV_SYNBELT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	12,583.21	10	\$1,564.94	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	18,411.52	15	\$4,229.78	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Electronic Equipment Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	548.10	10	\$604.92	0%	0%	\$165.36	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	5,951.92	1	\$54.66	0%	0%	\$8.92	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	2,307.33	2	\$14.74	0%	0%	\$3.28	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Electronic Equipment Mfg	Process	Dairy - Milk Precoolers	employee	New	165.93	15	\$79.35	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Electronic Equipment Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	22.33	15	\$2.90	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1

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Electronic Equipment Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	6.26	15	\$0.81	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Electronic Equipment Mfg	Motors	Automatic Milker Takeoffs	Cows	New	30.60	10	\$306.00	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Electronic Equipment Mfg	Process	Clean Room: Change Filter Strategy	employee	New	49.88	15	\$0.38	15%	75%	\$0.93	11.99	11.99	CLEANRM_FILTER-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Chiller Optimize	employee	New	49.19	15	\$4.70	15%	75%	\$11.64	11.83	11.83	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Clean Room: Clean Room HVAC	employee	New	29.87	15	\$5.67	15%	75%	\$23.15	7.18	7.18	CLEANRM_HVAC-Cooling-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	29.87	15	\$17.82	15%	75%	(\$68.49)	6.10	6.10	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	6.24	15	\$1.37	15%	75%	\$26.69	1.27	1.27	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	12.47	15	\$6.59	15%	75%	(\$89.91)	2.55	2.55	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Electronic Equipment Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	12.47	15	\$0.13	15%	75%	(\$14.88)	2.55	2.55	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Electronic Equipment Mfg	Motors	Panel: Hydraulic Press	employee	New	239.80	10	\$56.41	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	248.37	10	\$4.22	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Metal: New Arc Furnace	employee	New	321.57	10	\$34.83	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Electronic Equipment Mfg	Process	Paper: Premium Control Large Material	employee	New	79.80	10	\$41.18	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Electronic Equipment Mfg	Process	Paper: Efficient Pulp Screen	employee	New	63.91	10	\$13.57	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Kraft: Effluent Treatment System	employee	New	63.91	10	\$5.56	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Kraft: Efficient Agitator	employee	New	428.22	10	\$42.09	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Electronic Equipment Mfg	Process	Mech Pulp: Premium Process	employee	New	0.72	5	\$0.10	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Electronic Equipment Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	3.82	1	\$0.16	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Transformer - High Efficiency	employee	New	75.39	10	\$35.05	15%	15%	\$17.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Heating	Transformer - High Efficiency	employee	New	152.69	10	\$35.05	15%	15%	\$17.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Ventilation	Transformer - High Efficiency	employee	New	5.54	10	\$35.05	15%	15%	\$17.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	7.55	10	\$35.05	15%	15%	\$17.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	1.94	10	\$35.05	15%	15%	\$17.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Motors	Transformer - High Efficiency	employee	New	20.65	10	\$35.05	15%	15%	\$17.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Electronic Equipment Mfg	Process	Transformer - High Efficiency	employee	New	31.96	10	\$35.05	15%	15%	\$17.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	9.37	10	\$35.05	15%	15%	\$17.08	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Electronic Equipment Mfg	Cooling	Strategic Energy Management	employee	New	217.81	3	\$70.34	3%	11%	\$28.70	0.41	0.41	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Heating	Strategic Energy Management	employee	New	441.09	3	\$70.34	3%	11%	\$28.70	0.29	0.29	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Ventilation	Strategic Energy Management	employee	New	15.99	3	\$70.34	3%	11%	\$28.70	0.17	0.17	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Interior Lighting	Strategic Energy Management	employee	New	21.81	3	\$70.34	3%	11%	\$28.70	0.23	0.23	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Strategic Energy Management	employee	New	5.59	3	\$70.34	3%	11%	\$28.70	0.06	0.06	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Motors	Strategic Energy Management	employee	New	59.65	3	\$70.34	3%	11%	\$28.70	0.64	0.64	IND_SEM-Motors-AEG-1
Electronic Equipment Mfg	Process	Strategic Energy Management	employee	New	92.32	3	\$70.34	3%	11%	\$28.70	0.98	0.98	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Strategic Energy Management	employee	New	27.07	3	\$70.34	3%	11%	\$28.70	0.47	0.34	IND_SEM-Process-AEG-1
Electronic Equipment Mfg	Interior Lighting	Commissioning	employee	New	25.17	3	\$101.44	5%	39%	\$148.59	0.92	0.93	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Commissioning	employee	New	6.45	3	\$101.44	5%	39%	\$148.59	0.24	0.24	IND_SEM-HVAC-AEG-1

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Electronic Equipment Mfg	Motors	Commissioning	employee	New	68.82	3	\$101.44	5%	39%	\$148.59	3.46	3.46	IND_SEM-HVAC-AEG-1
Electronic Equipment Mfg	Process	Commissioning	employee	New	106.52	3	\$101.44	5%	39%	\$148.59	6.69	6.69	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Miscellaneous	Commissioning	employee	New	31.23	3	\$101.44	5%	39%	\$148.59	1.18	0.98	IND_SEM-Lighting-AEG-1
Electronic Equipment Mfg	Interior Lighting	Retrocommissioning	employee	New	25.17	3	\$64.40	0%	0%	\$94.33	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Exterior Lighting	Retrocommissioning	employee	New	6.45	3	\$64.40	0%	0%	\$94.33	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Motors	Retrocommissioning	employee	New	68.82	3	\$64.40	0%	0%	\$94.33	0.00	0.00	IND_RCX-Motors-AEG-1
Electronic Equipment Mfg	Process	Retrocommissioning	employee	New	106.52	3	\$64.40	0%	0%	\$94.33	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Miscellaneous	Retrocommissioning	employee	New	31.23	3	\$64.40	0%	0%	\$94.33	0.00	0.00	IND_RCX-Process-AEG-1
Electronic Equipment Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	2.56	12	\$1.40	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Electronic Equipment Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Electronic Equipment Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	42.59	11	\$33.18	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Electronic Equipment Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD

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Electronic Equipment Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Electronic Equipment Mfg	Motors	WHP - ORC	employee	New	70.03	20	\$35.02	0%	91%	\$32.42	92.38	92.38	WHP Analysis
Electronic Equipment Mfg	Process	WHP - ORC	employee	New	86.72	20	\$35.02	0%	91%	\$32.42	142.99	142.99	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Electronic Equipment Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	7.14	7.26	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	5.23	5.24	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	3.15	3.18	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	2.79	2.83	Building Energy Simulation Tool

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Industrial Machinery	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.22	0.22	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.13	0.13	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.05	0.06	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	3.48	3.50	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	2.10	2.12	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	0.90	0.91	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.49	0.49	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.30	0.30	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	2.29	2.33	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	19.05	19.39	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	9.25	9.41	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	1.72	1.76	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	7.69	7.88	AEG-BEST
Industrial Machinery	Cooling	HVAC - Economizer	sqft	Existing	0.07	5	\$0.40	18%	30%	\$1,379.92	8.23	8.44	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	1.07	1.09	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	33.30	34.11	HVLS-Cooling-AEG-1

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Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	47.19	47.44	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	2.35	2.42	RTU_MNT-Cooling-PGE-R2-1
Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	13.24	13.47	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	9.69	9.72	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	5.84	5.90	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.05	15	\$0.36	7%	33%	\$902.77	45.59	48.54	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.07	15	\$0.60	7%	33%	\$1,063.97	63.82	67.95	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.22	0.24	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	8.43	8.59	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	8.63	8.80	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	10.15	10.57	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	14.81	15.42	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1

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Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	10.12	10.54	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,688.00	20	\$924.15	15%	20%	\$36.88	24.97	24.97	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	Existing	3.83	15	\$3.83	20%	50%	\$122.12	2.89	2.89	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	Existing	6.12	15	\$2.68	20%	50%	\$53.42	4.63	4.63	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	Existing	39.29	10	\$5.76	9%	38%	\$55.29	28.46	28.46	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	Existing	29.47	12	\$8.78	9%	38%	(\$25.77)	20.99	20.99	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	Existing	29.47	10	\$9.15	9%	38%	\$46.53	20.99	20.99	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	Existing	50.29	10	\$5.06	9%	38%	\$48.38	36.43	36.43	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	Existing	59.43	10	\$8.37	9%	38%	\$17.76	42.34	42.34	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	Existing	91.43	10	\$42.17	9%	38%	\$69.11	65.14	65.14	FAN_VSD-Motors-UN-v1.0-5
Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	Existing	136.26	10	\$10.23	17%	50%	\$39.01	115.17	115.17	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	8.53	8.53	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.57	0.57	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	155.72	10	\$16.85	9%	15%	\$16.21	23.36	23.36	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	Existing	31.14	10	\$7.31	9%	38%	\$2.98	22.19	22.19	CMPAIR_SYSCTRL-Motors-UN-v1.0-3

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Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	Existing	77.86	10	\$7.35	18%	75%	\$41.91	112.82	112.82	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	Existing	58.40	15	\$44.92	26%	45%	\$93.77	27.74	27.74	CMPAIR_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	1.95	10	\$0.69	17%	50%	\$53.10	1.65	1.65	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	11.68	10	\$2.25	17%	50%	\$28.82	9.87	9.87	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	27.94	27.94	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	11.68	15	\$6.18	17%	50%	\$64.46	9.87	9.87	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	Existing	109.00	6	\$16.87	26%	45%	\$32.53	51.77	51.77	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	Existing	118.03	10	\$41.54	25%	45%	\$52.72	59.01	59.01	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	3.76	10	\$1.59	10%	50%	\$63.27	15.06	15.06	MTR_GRWND<100HP-Motors-7PLN-v5-17
Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	2.09	10	\$0.56	6%	25%	\$40.42	3.97	3.97	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	31.37	12	\$6.98	16%	25%	\$30.51	29.80	29.80	2015-mdu-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	Existing	8.37	10	\$2.10	16%	36%	\$37.60	16.97	16.97	DRV_SYNBELT-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	Existing	12,198.76	10	\$1,517.12	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	Existing	17,849.00	15	\$4,100.55	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100

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Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	2,275.42	10	\$604.92	0%	0%	\$39.83	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	5,770.08	1	\$54.66	0%	0%	\$9.20	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,236.83	2	\$14.74	0%	0%	\$3.38	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	Existing	25.51	15	\$12.20	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	70.42	15	\$9.13	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	84.56	15	\$10.92	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	Existing	63.52	10	\$635.18	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	Existing	13.82	15	\$0.11	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	Existing	7.56	15	\$0.72	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	Existing	4.59	15	\$0.87	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	4.59	15	\$2.74	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	1.73	15	\$0.38	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	3.46	15	\$1.83	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	3.46	15	\$0.04	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1

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Industrial Machinery	Motors	Panel: Hydraulic Press	employee	Existing	176.48	10	\$41.51	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	182.78	10	\$3.11	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Metal: New Arc Furnace	employee	Existing	117.18	10	\$12.69	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	Existing	19.22	10	\$9.92	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	Existing	15.39	10	\$3.27	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	Existing	15.39	10	\$1.34	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	Existing	315.14	10	\$30.98	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	Existing	0.17	5	\$0.02	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	2.81	1	\$0.12	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	Existing	33.76	10	\$17.94	15%	15%	\$17.51	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Heating	Transformer - High Efficiency	employee	Existing	72.01	10	\$17.94	15%	15%	\$17.51	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	Existing	2.73	10	\$17.94	15%	15%	\$17.51	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	Existing	6.33	10	\$17.94	15%	15%	\$17.51	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	Existing	1.47	10	\$17.94	15%	15%	\$17.51	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	Existing	25.10	10	\$17.94	15%	15%	\$17.51	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Industrial Machinery	Process	Transformer - High Efficiency	employee	Existing	7.70	10	\$17.94	15%	15%	\$17.51	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	Existing	4.62	10	\$17.94	15%	15%	\$17.51	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	Existing	97.54	3	\$36.00	3%	11%	\$29.41	0.81	0.82	IND_SEM-HVAC-AEG-1
Industrial Machinery	Heating	Strategic Energy Management	employee	Existing	208.02	3	\$36.00	3%	11%	\$29.41	0.61	0.61	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	Existing	7.89	3	\$36.00	3%	11%	\$29.41	0.37	0.37	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	Existing	18.29	3	\$36.00	3%	11%	\$29.41	0.74	0.78	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	Existing	4.26	3	\$36.00	3%	11%	\$29.41	0.19	0.19	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	Existing	72.50	3	\$36.00	3%	11%	\$29.41	3.47	3.47	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	Existing	22.24	3	\$36.00	3%	11%	\$29.41	1.06	1.06	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	Existing	13.35	3	\$36.00	3%	11%	\$29.41	1.10	0.90	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	Existing	21.10	3	\$64.84	0%	0%	\$152.49	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Exterior Lighting	Commissioning	employee	Existing	4.92	3	\$64.84	0%	0%	\$152.49	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	Existing	83.66	3	\$64.84	0%	0%	\$152.49	0.00	0.00	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	Existing	25.66	3	\$64.84	0%	0%	\$152.49	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Miscellaneous	Commissioning	employee	Existing	15.40	3	\$64.84	0%	0%	\$152.49	0.00	0.00	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	Existing	21.10	3	\$41.16	5%	39%	\$96.81	14.61	15.37	IND_RCX-Motors-AEG-1

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Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	Existing	4.92	3	\$41.16	5%	39%	\$96.81	3.70	3.80	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	Existing	83.66	3	\$41.16	5%	39%	\$96.81	68.07	68.07	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	Existing	25.66	3	\$41.16	5%	39%	\$96.81	20.88	20.88	IND_RCX-Process-AEG-1
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	Existing	15.40	3	\$41.16	5%	39%	\$96.81	21.61	17.66	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	5.31	12	\$2.90	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	88.40	11	\$68.88	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Industrial Machinery	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	3.11	3.11	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	2.12	2.12	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	1.24	1.24	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	1.21	1.21	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.09	0.09	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.05	0.05	Building Energy Simulation Tool
Industrial Machinery	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.02	0.02	Building Energy Simulation Tool
Industrial Machinery	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	1.41	1.41	Building Energy Simulation Tool
Industrial Machinery	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.83	0.83	Building Energy Simulation Tool
Industrial Machinery	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.38	0.39	Building Energy Simulation Tool
Industrial Machinery	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.20	0.20	Building Energy Simulation Tool
Industrial Machinery	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.11	0.11	Building Energy Simulation Tool
Industrial Machinery	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.39	0.39	AEG-BEST
Industrial Machinery	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	4.69	4.69	AEG-BEST

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Industrial Machinery	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	2.28	2.28	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Industrial Machinery	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.43	0.43	CHLR_VSPMP-Cooling-SCE-17_R0-86
Industrial Machinery	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	1.34	1.34	AEG-BEST
Industrial Machinery	Cooling	HVAC - Economizer	sqft	New	0.08	5	\$0.40	18%	30%	\$1,283.08	0.73	0.73	AEG-BEST
Industrial Machinery	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.25	0.25	VENT_DCV-Ventilation-7PLN-v5-5
Industrial Machinery	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	8.69	8.71	HVLS-Cooling-AEG-1
Industrial Machinery	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	11.47	11.47	HVLS-Heating-AEG-1
Industrial Machinery	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.11	0.11	RTU_MNT-Cooling-PGE-R2-1
Industrial Machinery	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	2.48	2.49	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	1.69	1.69	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	0.99	0.99	STAT_WIFI-All-7PLN-v2-1
Industrial Machinery	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.04	15	\$0.36	22%	41%	\$984.38	18.69	18.78	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.06	15	\$0.60	22%	41%	\$1,160.17	26.16	26.29	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Industrial Machinery	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.05	0.05	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Industrial Machinery	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1

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Industrial Machinery	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Industrial Machinery	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	1.52	1.53	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Industrial Machinery	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	2.15	2.17	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	1.49	1.51	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Industrial Machinery	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	1.14	1.16	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Industrial Machinery	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	1.16	1.18	CLTG_EXT_PV-Exterior Lighting-AEG-2
Industrial Machinery	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,688.00	20	\$924.15	15%	20%	\$36.88	7.78	7.78	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Industrial Machinery	Process	Refrigeration - Floating Head Pressure	employee	New	3.83	15	\$3.83	20%	50%	\$122.12	0.68	0.68	RFG_FHPC-Refrigeration-RTF-v1.3-23
Industrial Machinery	Process	Refrigeration - System Optimization	employee	New	6.12	15	\$2.68	20%	50%	\$53.42	1.09	1.09	AEG Research - prior study
Industrial Machinery	Motors	Pumping System - Equipment Upgrade	employee	New	39.29	10	\$5.76	9%	38%	\$55.29	4.68	4.68	PUMP_EQPT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Pumping System - System Optimization	employee	New	29.47	12	\$8.78	9%	38%	(\$25.77)	5.02	5.02	PUMP_SYSOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Pumping System - Variable Speed Drive	employee	New	29.47	10	\$9.15	9%	38%	\$46.53	4.45	4.45	PUMP_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Fan System - Equipment Upgrade	employee	New	50.29	10	\$5.06	9%	38%	\$48.38	5.99	5.99	FAN_EQPTF-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Flow Optimization	employee	New	59.43	10	\$8.37	9%	38%	\$17.76	8.98	8.98	FAN_FLOWOPT-Motors-UN-v1.0-5
Industrial Machinery	Motors	Fan System - Variable Speed Drive	employee	New	91.43	10	\$42.17	9%	38%	\$69.11	13.82	13.82	FAN_VSD-Motors-UN-v1.0-5

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Industrial Machinery	Motors	Compressed Air - Equipment Upgrade	employee	New	136.26	10	\$10.23	17%	50%	\$39.01	18.92	18.92	CMPAIR_EQPT-Motors-7PLN-v5-2
Industrial Machinery	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	2.41	2.41	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.09	0.09	CMPAIR_RFRGDRIY-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	155.72	10	\$16.85	9%	15%	\$16.21	4.95	4.95	E3T
Industrial Machinery	Motors	Compressed Air - System Controls	employee	New	31.14	10	\$7.31	9%	38%	\$2.98	4.71	4.71	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Leak Management Program	employee	New	77.86	10	\$7.35	18%	75%	\$41.91	18.54	18.54	CMPAIR_LEAK-Motors-7PLN-v5-1
Industrial Machinery	Motors	Compressed Air - Variable Speed Drive	employee	New	58.40	15	\$44.92	26%	45%	\$93.77	7.83	7.83	CMPAIR_VSD-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	1.95	10	\$0.69	17%	50%	\$53.10	0.27	0.27	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Industrial Machinery	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	11.68	10	\$2.25	17%	50%	\$28.82	1.62	1.62	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	7.86	7.86	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Industrial Machinery	Motors	Compressed Air - Receiver Capacity Addition	employee	New	11.68	15	\$6.18	17%	50%	\$64.46	2.33	2.33	CMPAIR_STORAGE-Motors-UN-v1.0-3
Industrial Machinery	Motors	Compressed Air - End Use Optimization	employee	New	109.00	6	\$16.87	26%	45%	\$32.53	7.61	7.61	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Industrial Machinery	Motors	Material Handling - Variable Speed Drive	employee	New	118.03	10	\$41.54	25%	45%	\$52.72	12.52	12.52	MATHAND_VSD-Material Handling-7PLN-v5-2
Industrial Machinery	Motors	Motors - Green Rewind (<100 HP)	employee	New	3.76	10	\$1.59	10%	50%	\$63.27	3.19	3.19	MTR_GRWND<100HP-Motors-7PLN-v5-17

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Industrial Machinery	Motors	Motors - Green Rewind (100 HP+)	employee	New	2.09	10	\$0.56	6%	25%	\$40.42	0.84	0.84	MTR_GRWND>100HP-Motors-7PLN-v5-25
Industrial Machinery	Motors	Switch from Belt Drive to Direct Drive	employee	New	31.37	12	\$6.98	16%	25%	\$30.51	7.12	7.12	2015-mdu-irp-report--volume-iii.pdf
Industrial Machinery	Motors	Motors - Synchronous Belts	employee	New	8.37	10	\$2.10	16%	36%	\$37.60	2.79	2.79	DRV_SYNBELT-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Engine Block Heater Controls	Unit	New	12,198.76	10	\$1,517.12	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Circulating Engine Block Heater	unit	New	17,849.00	15	\$4,100.55	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Industrial Machinery	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	2,275.42	10	\$604.92	0%	0%	\$39.83	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Industrial Machinery	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	5,770.08	1	\$54.66	0%	0%	\$9.20	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	2,236.83	2	\$14.74	0%	0%	\$3.38	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Industrial Machinery	Process	Dairy - Milk Precoolers	employee	New	25.51	15	\$12.20	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Industrial Machinery	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	70.42	15	\$9.13	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Industrial Machinery	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	84.56	15	\$10.92	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Industrial Machinery	Motors	Automatic Milker Takeoffs	Cows	New	63.52	10	\$635.18	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Industrial Machinery	Process	Clean Room: Change Filter Strategy	employee	New	13.82	15	\$0.11	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Industrial Machinery	Process	Clean Room: Chiller Optimize	employee	New	7.56	15	\$0.72	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1

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Industrial Machinery	Process	Clean Room: Clean Room HVAC	employee	New	4.59	15	\$0.87	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Solidstate Chiller	employee	New	4.59	15	\$2.74	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	1.73	15	\$0.38	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	3.46	15	\$1.83	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Industrial Machinery	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	3.46	15	\$0.04	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Industrial Machinery	Motors	Panel: Hydraulic Press	employee	New	176.48	10	\$41.51	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Industrial Machinery	Motors	Wood: Replace Pneumatic Conveyor	employee	New	182.78	10	\$3.11	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Metal: New Arc Furnace	employee	New	117.18	10	\$12.69	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Industrial Machinery	Process	Paper: Premium Control Large Material	employee	New	19.22	10	\$9.92	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Industrial Machinery	Process	Paper: Efficient Pulp Screen	employee	New	15.39	10	\$3.27	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Industrial Machinery	Process	Kraft: Effluent Treatment System	employee	New	15.39	10	\$1.34	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Industrial Machinery	Motors	Kraft: Efficient Agitator	employee	New	315.14	10	\$30.98	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Industrial Machinery	Process	Mech Pulp: Premium Process	employee	New	0.17	5	\$0.02	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Industrial Machinery	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	2.81	1	\$0.12	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Industrial Machinery	Cooling	Transformer - High Efficiency	employee	New	35.97	10	\$17.94	15%	15%	\$17.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Industrial Machinery	Heating	Transformer - High Efficiency	employee	New	72.85	10	\$17.94	15%	15%	\$17.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Ventilation	Transformer - High Efficiency	employee	New	2.64	10	\$17.94	15%	15%	\$17.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Interior Lighting	Transformer - High Efficiency	employee	New	5.38	10	\$17.94	15%	15%	\$17.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Exterior Lighting	Transformer - High Efficiency	employee	New	1.38	10	\$17.94	15%	15%	\$17.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Motors	Transformer - High Efficiency	employee	New	25.10	10	\$17.94	15%	15%	\$17.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Process	Transformer - High Efficiency	employee	New	7.70	10	\$17.94	15%	15%	\$17.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Miscellaneous	Transformer - High Efficiency	employee	New	4.54	10	\$17.94	15%	15%	\$17.16	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Industrial Machinery	Cooling	Strategic Energy Management	employee	New	103.93	3	\$36.00	3%	11%	\$28.83	0.04	0.04	IND_SEM-HVAC-AEG-1
Industrial Machinery	Heating	Strategic Energy Management	employee	New	210.47	3	\$36.00	3%	11%	\$28.83	0.03	0.03	IND_SEM-HVAC-AEG-1
Industrial Machinery	Ventilation	Strategic Energy Management	employee	New	7.63	3	\$36.00	3%	11%	\$28.83	0.02	0.02	IND_SEM-HVAC-AEG-1
Industrial Machinery	Interior Lighting	Strategic Energy Management	employee	New	15.53	3	\$36.00	3%	11%	\$28.83	0.03	0.03	IND_SEM-Lighting-AEG-1
Industrial Machinery	Exterior Lighting	Strategic Energy Management	employee	New	3.98	3	\$36.00	3%	11%	\$28.83	0.01	0.01	IND_SEM-Lighting-AEG-1
Industrial Machinery	Motors	Strategic Energy Management	employee	New	72.50	3	\$36.00	3%	11%	\$28.83	0.16	0.16	IND_SEM-Motors-AEG-1
Industrial Machinery	Process	Strategic Energy Management	employee	New	22.24	3	\$36.00	3%	11%	\$28.83	0.05	0.05	IND_SEM-Process-AEG-1
Industrial Machinery	Miscellaneous	Strategic Energy Management	employee	New	13.12	3	\$36.00	3%	11%	\$28.83	0.05	0.03	IND_SEM-Process-AEG-1
Industrial Machinery	Interior Lighting	Commissioning	employee	New	17.92	3	\$64.84	5%	39%	\$155.31	1.16	1.16	IND_SEM-HVAC-AEG-1

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Industrial Machinery	Exterior Lighting	Commissioning	employee	New	4.59	3	\$64.84	5%	39%	\$155.31	0.30	0.30	IND_SEM-HVAC-AEG-1
Industrial Machinery	Motors	Commissioning	employee	New	83.66	3	\$64.84	5%	39%	\$155.31	7.40	7.40	IND_SEM-HVAC-AEG-1
Industrial Machinery	Process	Commissioning	employee	New	25.66	3	\$64.84	5%	39%	\$155.31	2.84	2.84	IND_SEM-Lighting-AEG-1
Industrial Machinery	Miscellaneous	Commissioning	employee	New	15.14	3	\$64.84	5%	39%	\$155.31	1.01	0.84	IND_SEM-Lighting-AEG-1
Industrial Machinery	Interior Lighting	Retrocommissioning	employee	New	17.92	3	\$41.16	0%	0%	\$98.59	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Exterior Lighting	Retrocommissioning	employee	New	4.59	3	\$41.16	0%	0%	\$98.59	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Motors	Retrocommissioning	employee	New	83.66	3	\$41.16	0%	0%	\$98.59	0.00	0.00	IND_RCX-Motors-AEG-1
Industrial Machinery	Process	Retrocommissioning	employee	New	25.66	3	\$41.16	0%	0%	\$98.59	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Miscellaneous	Retrocommissioning	employee	New	15.14	3	\$41.16	0%	0%	\$98.59	0.00	0.00	IND_RCX-Process-AEG-1
Industrial Machinery	Motors	Municipal Sewage Treatment - Optimization	employee	New	5.31	12	\$2.90	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Industrial Machinery	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Industrial Machinery	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	88.40	11	\$68.88	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Industrial Machinery	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Industrial Machinery	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Industrial Machinery	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Industrial Machinery	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	1.29	1.31	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	0.94	0.94	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	0.57	0.57	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	0.50	0.51	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.04	0.04	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.02	0.02	Building Energy Simulation Tool

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Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	0.63	0.63	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	0.38	0.38	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	0.16	0.16	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.09	0.09	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.05	0.05	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	0.41	0.42	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	3.43	3.49	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	1.67	1.70	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	0.31	0.32	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	1.39	1.42	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	Existing	0.23	5	\$0.40	18%	30%	\$422.11	1.48	1.52	AEG-BEST

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Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	0.19	0.20	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	6.00	6.15	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	8.50	8.55	HVLS-Heating-AEG-1
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	0.42	0.44	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	2.39	2.43	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	1.75	1.75	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	1.05	1.06	STAT_WIFI-All-7PLN-v2-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.17	15	\$0.36	7%	33%	\$276.15	19.54	20.80	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.24	15	\$0.60	7%	33%	\$325.46	27.35	29.12	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.09	0.10	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	3.62	3.69	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	3.70	3.78	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	4.36	4.54	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	6.36	6.62	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	4.34	4.52	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	5,708.05	20	\$1,962.45	15%	20%	\$36.88	13.72	13.72	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	Existing	12.24	15	\$12.26	20%	50%	\$122.12	1.20	1.20	RFG_FHPC-Refrigeration-RTF-v1.3-23
Lumber Wood Products	Process	Refrigeration - System Optimization	employee	Existing	19.58	15	\$8.58	20%	50%	\$53.42	1.92	1.92	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	Existing	527.66	10	\$77.37	9%	38%	\$55.29	49.47	49.47	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	Existing	395.74	12	\$117.91	9%	38%	(\$25.77)	36.49	36.49	PUMP_SYSOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	Existing	395.74	10	\$122.89	9%	38%	\$46.53	36.49	36.49	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	Existing	213.85	10	\$21.50	9%	38%	\$48.38	20.05	20.05	FAN_EQPTF-Motors-UN-v1.0-5

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Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	Existing	252.73	10	\$35.57	9%	38%	\$17.76	23.30	23.30	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	Existing	388.82	10	\$179.34	9%	38%	\$69.11	35.85	35.85	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	Existing	350.14	10	\$26.29	17%	50%	\$39.01	38.30	38.30	CMPAIR_EQPT-Motors-7PLN-v5-2
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	2.84	2.84	CMPAIR_HTCPDES DRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.19	0.19	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	400.16	10	\$43.29	9%	15%	\$16.21	7.77	7.77	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	Existing	80.03	10	\$18.79	9%	38%	\$2.98	7.38	7.38	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	Existing	200.08	10	\$18.89	18%	75%	\$41.91	37.52	37.52	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	Existing	150.06	15	\$115.44	26%	45%	\$93.77	9.22	9.22	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	5.00	10	\$1.77	17%	50%	\$53.10	0.55	0.55	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	30.01	10	\$5.77	17%	50%	\$28.82	3.28	3.28	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	9.29	9.29	CMPAIR_OAIN-Motors-MEMD-v. 2014-1

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Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	30.01	15	\$15.87	17%	50%	\$64.46	3.28	3.28	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	Existing	280.11	6	\$43.34	26%	45%	\$32.53	17.22	17.22	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	Existing	2,520.32	10	\$886.88	25%	45%	\$52.72	163.07	163.07	MATHAND_VSD-Material Handling-7PLN-v5-2
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	34.64	10	\$14.63	10%	50%	\$63.27	22.41	22.41	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	19.24	10	\$5.19	6%	25%	\$40.42	5.91	5.91	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	288.67	12	\$64.21	16%	25%	\$30.51	44.36	44.36	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	Existing	76.98	10	\$19.32	16%	36%	\$37.60	25.26	25.26	DRV_SYNBELT-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	Existing	25,904.43	10	\$3,221.65	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	Existing	37,902.87	15	\$8,707.63	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	15,280.26	10	\$604.92	0%	0%	\$5.93	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	12,252.93	1	\$54.66	0%	0%	\$4.33	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	4,749.98	2	\$14.74	0%	0%	\$1.59	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	Existing	81.58	15	\$39.01	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	93.51	15	\$12.13	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	355.08	15	\$45.87	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	Existing	853.09	10	\$8,530.91	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	Existing	75.86	15	\$0.58	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	Existing	24.18	15	\$2.31	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	Existing	14.68	15	\$2.79	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	14.68	15	\$8.76	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	9.48	15	\$2.08	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	18.96	15	\$10.02	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	18.96	15	\$0.20	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	Existing	3,768.24	10	\$886.35	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1

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Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	3,902.82	10	\$66.38	15%	75%	(\$64.68)	757.54	757.54	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	Existing	989.59	10	\$107.17	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	Existing	106.82	10	\$55.13	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	Existing	85.56	10	\$18.16	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	Existing	85.56	10	\$7.44	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	Existing	6,728.99	10	\$661.42	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	Existing	0.96	5	\$0.13	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	60.07	1	\$2.52	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	Existing	47.02	10	\$61.47	15%	15%	\$17.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	Existing	100.28	10	\$61.47	15%	15%	\$17.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	Existing	3.80	10	\$61.47	15%	15%	\$17.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	Existing	20.99	10	\$61.47	15%	15%	\$17.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.89	10	\$61.47	15%	15%	\$17.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	Existing	288.67	10	\$61.47	15%	15%	\$17.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	Existing	42.78	10	\$61.47	15%	15%	\$17.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	Existing	19.63	10	\$61.47	15%	15%	\$17.34	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	Existing	135.83	3	\$123.38	3%	11%	\$29.13	1.53	1.55	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	Existing	289.69	3	\$123.38	3%	11%	\$29.13	1.16	1.16	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	Existing	10.99	3	\$123.38	3%	11%	\$29.13	0.70	0.70	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	Existing	60.64	3	\$123.38	3%	11%	\$29.13	3.36	3.53	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	Existing	14.13	3	\$123.38	3%	11%	\$29.13	0.85	0.87	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	Existing	833.94	3	\$123.38	3%	11%	\$29.13	54.24	54.24	IND_SEM-Motors-AEG-1
Lumber Wood Products	Process	Strategic Energy Management	employee	Existing	123.58	3	\$123.38	3%	11%	\$29.13	8.04	8.04	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	Existing	56.70	3	\$123.38	3%	11%	\$29.13	6.36	5.19	IND_SEM-Process-AEG-1

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Lumber Wood Products	Interior Lighting	Commissioning	employee	Existing	69.97	3	\$568.08	0%	0%	\$161.74	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	Existing	16.30	3	\$568.08	0%	0%	\$161.74	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	Existing	962.24	3	\$568.08	0%	0%	\$161.74	0.00	0.00	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Process	Commissioning	employee	Existing	142.59	3	\$568.08	0%	0%	\$161.74	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	Existing	65.42	3	\$568.08	0%	0%	\$161.74	0.00	0.00	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	Existing	69.97	3	\$360.63	10%	35%	\$102.67	4.61	4.85	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	Existing	16.30	3	\$360.63	10%	35%	\$102.67	1.17	1.20	IND_RCX-Motors-AEG-1
Lumber Wood Products	Motors	Retrocommissioning	employee	Existing	962.24	3	\$360.63	10%	35%	\$102.67	74.50	74.50	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	Existing	142.59	3	\$360.63	10%	35%	\$102.67	11.04	11.04	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	Existing	65.42	3	\$360.63	10%	35%	\$102.67	8.74	7.14	IND_RCX-Process-AEG-1
Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	71.29	12	\$38.89	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1

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Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	1,187.23	11	\$925.11	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	0.56	0.56	Building Energy Simulation Tool

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Lumber Wood Products	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	0.38	0.38	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	0.22	0.22	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	0.22	0.22	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.01	0.01	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.00	0.00	Building Energy Simulation Tool
Lumber Wood Products	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	0.25	0.25	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	0.15	0.15	Building Energy Simulation Tool
Lumber Wood Products	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.07	0.07	Building Energy Simulation Tool
Lumber Wood Products	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.04	0.04	Building Energy Simulation Tool
Lumber Wood Products	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.02	0.02	Building Energy Simulation Tool
Lumber Wood Products	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.07	0.07	AEG-BEST

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Lumber Wood Products	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	0.84	0.84	AEG-BEST
Lumber Wood Products	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	0.41	0.41	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Lumber Wood Products	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.08	0.08	CHLR_VSPMP-Cooling-SCE-17_R0-86
Lumber Wood Products	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	0.24	0.24	AEG-BEST
Lumber Wood Products	Cooling	HVAC - Economizer	sqft	New	0.25	5	\$0.40	18%	30%	\$392.49	0.13	0.13	AEG-BEST
Lumber Wood Products	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.05	0.05	VENT_DCV-Ventilation-7PLN-v5-5
Lumber Wood Products	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	1.57	1.57	HVLS-Cooling-AEG-1
Lumber Wood Products	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	2.07	2.07	HVLS-Heating-AEG-1
Lumber Wood Products	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.02	0.02	RTU_MNT-Cooling-PGE-R2-1
Lumber Wood Products	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	0.45	0.45	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	0.30	0.30	STAT_WIFI-AII-7PLN-v2-1
Lumber Wood Products	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	0.18	0.18	STAT_WIFI-AII-7PLN-v2-1

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Lumber Wood Products	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.15	15	\$0.36	22%	41%	\$301.12	8.03	8.07	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.21	15	\$0.60	22%	41%	\$354.89	11.25	11.30	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Lumber Wood Products	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.02	0.02	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Lumber Wood Products	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	0.65	0.66	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Lumber Wood Products	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	0.92	0.93	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	0.64	0.65	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	0.49	0.50	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Lumber Wood Products	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	0.50	0.51	CLTG_EXT_PV-Exterior Lighting-AEG-2
Lumber Wood Products	Miscellaneous	High Efficiency Battery Chargers	Unit	New	5,708.05	20	\$1,962.45	15%	20%	\$36.88	4.27	4.27	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Lumber Wood Products	Process	Refrigeration - Floating Head Pressure	employee	New	12.24	15	\$12.26	20%	50%	\$122.12	0.28	0.28	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Lumber Wood Products	Process	Refrigeration - System Optimization	employee	New	19.58	15	\$8.58	20%	50%	\$53.42	0.45	0.45	AEG Research - prior study
Lumber Wood Products	Motors	Pumping System - Equipment Upgrade	employee	New	527.66	10	\$77.37	9%	38%	\$55.29	8.13	8.13	PUMP_EQPT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Pumping System - System Optimization	employee	New	395.74	12	\$117.91	9%	38%	(\$25.77)	8.72	8.72	PUMP_SYSOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Pumping System - Variable Speed Drive	employee	New	395.74	10	\$122.89	9%	38%	\$46.53	7.74	7.74	PUMP_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Fan System - Equipment Upgrade	employee	New	213.85	10	\$21.50	9%	38%	\$48.38	3.29	3.29	FAN_EQPTF-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Flow Optimization	employee	New	252.73	10	\$35.57	9%	38%	\$17.76	4.94	4.94	FAN_FLOWOPT-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Fan System - Variable Speed Drive	employee	New	388.82	10	\$179.34	9%	38%	\$69.11	7.60	7.60	FAN_VSD-Motors-UN-v1.0-5
Lumber Wood Products	Motors	Compressed Air - Equipment Upgrade	employee	New	350.14	10	\$26.29	17%	50%	\$39.01	6.29	6.29	CMPAIR_EQPT-Motors-7PLN-v5-2
Lumber Wood Products	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	0.80	0.80	CMPAIR_HTCPDES DRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.03	0.03	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Lumber Wood Products	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	400.16	10	\$43.29	9%	15%	\$16.21	1.65	1.65	E3T
Lumber Wood Products	Motors	Compressed Air - System Controls	employee	New	80.03	10	\$18.79	9%	38%	\$2.98	1.57	1.57	CMPAIR_SYSCtrl-Motors-UN-v1.0-3

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Lumber Wood Products	Motors	Compressed Air - Leak Management Program	employee	New	200.08	10	\$18.89	18%	75%	\$41.91	6.16	6.16	CMPAIR_LEAK-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Compressed Air - Variable Speed Drive	employee	New	150.06	15	\$115.44	26%	45%	\$93.77	2.61	2.61	CMPAIR_VSD-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	5.00	10	\$1.77	17%	50%	\$53.10	0.09	0.09	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Lumber Wood Products	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	30.01	10	\$5.77	17%	50%	\$28.82	0.54	0.54	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	2.61	2.61	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Lumber Wood Products	Motors	Compressed Air - Receiver Capacity Addition	employee	New	30.01	15	\$15.87	17%	50%	\$64.46	0.78	0.78	CMPAIR_STORAGE-Motors-UN-v1.0-3
Lumber Wood Products	Motors	Compressed Air - End Use Optimization	employee	New	280.11	6	\$43.34	26%	45%	\$32.53	2.53	2.53	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Lumber Wood Products	Motors	Material Handling - Variable Speed Drive	employee	New	2,520.32	10	\$886.88	25%	45%	\$52.72	34.59	34.59	MATHAND_VSD-Material Handling-7PLN-v5-2
Lumber Wood Products	Motors	Motors - Green Rewind (<100 HP)	employee	New	34.64	10	\$14.63	10%	50%	\$63.27	4.75	4.75	MTR_GRWND<100HP-Motors-7PLN-v5-17
Lumber Wood Products	Motors	Motors - Green Rewind (100 HP+)	employee	New	19.24	10	\$5.19	6%	25%	\$40.42	1.25	1.25	MTR_GRWND>100HP-Motors-7PLN-v5-25
Lumber Wood Products	Motors	Switch from Belt Drive to Direct Drive	employee	New	288.67	12	\$64.21	16%	25%	\$30.51	10.60	10.60	2015-mdu-irp-report--volume-iii.pdf
Lumber Wood Products	Motors	Motors - Synchronous Belts	employee	New	76.98	10	\$19.32	16%	36%	\$37.60	4.15	4.15	DRV_SYNBELT-Motors-7PLN-v5-1

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Lumber Wood Products	Miscellaneous	Engine Block Heater Controls	Unit	New	25,904.43	10	\$3,221.65	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Circulating Engine Block Heater	unit	New	37,902.87	15	\$8,707.63	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Lumber Wood Products	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	15,280.26	10	\$604.92	0%	0%	\$5.93	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Lumber Wood Products	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	12,252.93	1	\$54.66	0%	0%	\$4.33	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	4,749.98	2	\$14.74	0%	0%	\$1.59	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Lumber Wood Products	Process	Dairy - Milk Precoolers	employee	New	81.58	15	\$39.01	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Lumber Wood Products	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	93.51	15	\$12.13	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Lumber Wood Products	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	355.08	15	\$45.87	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Lumber Wood Products	Motors	Automatic Milker Takeoffs	Cows	New	853.09	10	\$8,530.91	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Lumber Wood Products	Process	Clean Room: Change Filter Strategy	employee	New	75.86	15	\$0.58	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Chiller Optimize	employee	New	24.18	15	\$2.31	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Lumber Wood Products	Process	Clean Room: Clean Room HVAC	employee	New	14.68	15	\$2.79	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Lumber Wood Products	Process	Elec Chip Fab: Solidstate Chiller	employee	New	14.68	15	\$8.76	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	9.48	15	\$2.08	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	18.96	15	\$10.02	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Lumber Wood Products	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	18.96	15	\$0.20	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Lumber Wood Products	Motors	Panel: Hydraulic Press	employee	New	3,768.24	10	\$886.35	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Lumber Wood Products	Motors	Wood: Replace Pneumatic Conveyor	employee	New	3,902.82	10	\$66.38	15%	75%	(\$64.68)	160.68	160.68	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Metal: New Arc Furnace	employee	New	989.59	10	\$107.17	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Lumber Wood Products	Process	Paper: Premium Control Large Material	employee	New	106.82	10	\$55.13	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Lumber Wood Products	Process	Paper: Efficient Pulp Screen	employee	New	85.56	10	\$18.16	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Lumber Wood Products	Process	Kraft: Effluent Treatment System	employee	New	85.56	10	\$7.44	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Kraft: Efficient Agitator	employee	New	6,728.99	10	\$661.42	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Lumber Wood Products	Process	Mech Pulp: Premium Process	employee	New	0.96	5	\$0.13	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1

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Lumber Wood Products	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	60.07	1	\$2.52	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Lumber Wood Products	Cooling	Transformer - High Efficiency	employee	New	50.10	10	\$61.47	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Heating	Transformer - High Efficiency	employee	New	101.46	10	\$61.47	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Ventilation	Transformer - High Efficiency	employee	New	3.68	10	\$61.47	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Interior Lighting	Transformer - High Efficiency	employee	New	17.83	10	\$61.47	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Exterior Lighting	Transformer - High Efficiency	employee	New	4.57	10	\$61.47	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Motors	Transformer - High Efficiency	employee	New	288.67	10	\$61.47	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Process	Transformer - High Efficiency	employee	New	42.78	10	\$61.47	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Miscellaneous	Transformer - High Efficiency	employee	New	19.29	10	\$61.47	15%	15%	\$17.26	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Lumber Wood Products	Cooling	Strategic Energy Management	employee	New	144.73	3	\$123.38	3%	11%	\$29.00	0.08	0.08	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Heating	Strategic Energy Management	employee	New	293.10	3	\$123.38	3%	11%	\$29.00	0.05	0.05	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Ventilation	Strategic Energy Management	employee	New	10.63	3	\$123.38	3%	11%	\$29.00	0.03	0.03	IND_SEM-HVAC-AEG-1

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Lumber Wood Products	Interior Lighting	Strategic Energy Management	employee	New	51.51	3	\$123.38	3%	11%	\$29.00	0.15	0.15	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Exterior Lighting	Strategic Energy Management	employee	New	13.20	3	\$123.38	3%	11%	\$29.00	0.04	0.04	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Motors	Strategic Energy Management	employee	New	833.94	3	\$123.38	3%	11%	\$29.00	2.50	2.50	IND_SEM-Motors-AEG-1
Lumber Wood Products	Process	Strategic Energy Management	employee	New	123.58	3	\$123.38	3%	11%	\$29.00	0.37	0.37	IND_SEM-Process-AEG-1
Lumber Wood Products	Miscellaneous	Strategic Energy Management	employee	New	55.72	3	\$123.38	3%	11%	\$29.00	0.27	0.20	IND_SEM-Process-AEG-1
Lumber Wood Products	Interior Lighting	Commissioning	employee	New	59.43	3	\$568.08	10%	35%	\$163.05	0.36	0.37	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Exterior Lighting	Commissioning	employee	New	15.23	3	\$568.08	10%	35%	\$163.05	0.09	0.09	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Motors	Commissioning	employee	New	962.24	3	\$568.08	10%	35%	\$163.05	10.11	10.11	IND_SEM-HVAC-AEG-1
Lumber Wood Products	Process	Commissioning	employee	New	142.59	3	\$568.08	10%	35%	\$163.05	1.50	1.50	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Miscellaneous	Commissioning	employee	New	64.29	3	\$568.08	10%	35%	\$163.05	0.41	0.34	IND_SEM-Lighting-AEG-1
Lumber Wood Products	Interior Lighting	Retrocommissioning	employee	New	59.43	3	\$360.63	0%	0%	\$103.51	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Exterior Lighting	Retrocommissioning	employee	New	15.23	3	\$360.63	0%	0%	\$103.51	0.00	0.00	IND_RCX-Motors-AEG-1

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Lumber Wood Products	Motors	Retrocommissioning	employee	New	962.24	3	\$360.63	0%	0%	\$103.51	0.00	0.00	IND_RCX-Motors-AEG-1
Lumber Wood Products	Process	Retrocommissioning	employee	New	142.59	3	\$360.63	0%	0%	\$103.51	0.00	0.00	IND_RCX-Process-AEG-1
Lumber Wood Products	Miscellaneous	Retrocommissioning	employee	New	64.29	3	\$360.63	0%	0%	\$103.51	0.00	0.00	IND_RCX-Process-AEG-1
Lumber Wood Products	Motors	Municipal Sewage Treatment - Optimization	employee	New	71.29	12	\$38.89	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Lumber Wood Products	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Lumber Wood Products	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	1,187.23	11	\$925.11	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Lumber Wood Products	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Lumber Wood Products	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Lumber Wood Products	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Lumber Wood Products	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	9.08	9.23	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	6.64	6.66	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	4.01	4.04	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	3.54	3.60	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.28	0.28	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.17	0.17	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.07	0.07	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	4.43	4.44	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	2.67	2.70	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	1.14	1.16	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.62	0.63	Building Energy Simulation Tool

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Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.38	0.38	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	2.91	2.96	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	24.22	24.64	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	11.76	11.96	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	2.18	2.23	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	9.78	10.02	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.43	5	\$0.40	18%	30%	\$228.81	10.46	10.73	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	1.36	1.38	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	42.33	43.36	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	59.98	60.29	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	2.98	3.07	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	16.84	17.12	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	12.32	12.36	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	7.43	7.50	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.32	15	\$0.36	7%	33%	\$149.69	85.67	91.21	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1

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Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.45	15	\$0.60	7%	33%	\$176.42	119.94	127.69	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.41	0.44	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	15.84	16.15	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	16.22	16.54	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	19.09	19.87	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	27.83	28.98	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	19.03	19.81	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	7,232.69	20	\$2,486.63	15%	20%	\$36.88	38.33	38.33	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	23.86	15	\$23.91	20%	50%	\$122.12	10.30	10.30	RFG_FHPC-Refrigeration-RTF-v1.3-23
Metal Mfg	Process	Refrigeration - System Optimization	employee	Existing	38.18	15	\$16.73	20%	50%	\$53.42	16.48	16.48	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	247.53	10	\$36.29	9%	38%	\$55.29	102.33	102.33	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	Existing	185.64	12	\$55.31	9%	38%	(\$25.77)	75.47	75.47	PUMP_SYSOPT-Motors-UN-v1.0-5

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Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	185.64	10	\$57.65	9%	38%	\$46.53	75.47	75.47	PUMP_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	65.02	10	\$6.54	9%	38%	\$48.38	26.88	26.88	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	Existing	76.84	10	\$10.82	9%	38%	\$17.76	31.24	31.24	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	118.22	10	\$54.53	9%	38%	\$69.11	48.06	48.06	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	437.58	10	\$32.85	17%	50%	\$39.01	211.05	211.05	CMPAIR_EQPT-Motors-7PLN-v5-2
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	15.62	15.62	CMPAIR_HTCPMPDESDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	1.05	1.05	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	500.09	10	\$54.10	9%	15%	\$16.21	42.80	42.80	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	Existing	100.02	10	\$23.49	9%	38%	\$2.98	40.66	40.66	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	250.04	10	\$23.61	18%	75%	\$41.91	206.74	206.74	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	187.53	15	\$144.26	26%	45%	\$93.77	50.82	50.82	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	6.25	10	\$2.22	17%	50%	\$53.10	3.01	3.01	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	37.51	10	\$7.21	17%	50%	\$28.82	18.09	18.09	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	51.20	51.20	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	37.51	15	\$19.84	17%	50%	\$64.46	18.09	18.09	CMPAIR_STORAGE-Motors-UN-v1.0-3

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Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	350.06	6	\$54.17	26%	45%	\$32.53	94.87	94.87	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	1,130.84	10	\$397.93	25%	45%	\$52.72	322.60	322.60	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	16.69	10	\$7.05	10%	50%	\$63.27	47.61	47.61	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	9.27	10	\$2.50	6%	25%	\$40.42	12.56	12.56	MTR_GRWND>100HP-Motors-7PLN-v5-25
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	139.07	12	\$30.93	16%	25%	\$30.51	94.22	94.22	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	Existing	37.09	10	\$9.31	16%	36%	\$37.60	53.66	53.66	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	32,823.63	10	\$4,082.17	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	48,026.91	15	\$11,033.49	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	14,336.02	10	\$604.92	0%	0%	\$6.32	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	15,525.75	1	\$54.66	0%	0%	\$3.42	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	6,018.72	2	\$14.74	0%	0%	\$1.26	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Metal Mfg	Process	Dairy - Milk Precoolers	employee	Existing	159.09	15	\$76.08	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	30.38	15	\$3.94	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	85.41	15	\$11.03	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2

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Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	400.19	10	\$4,001.87	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	242.34	15	\$1.84	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	47.16	15	\$4.51	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	28.64	15	\$5.44	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	28.64	15	\$17.08	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	30.29	15	\$6.63	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	60.59	15	\$32.00	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	60.59	15	\$0.64	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	Existing	1,690.77	10	\$397.70	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	1,751.16	10	\$29.78	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	Existing	1,619.20	10	\$175.36	15%	75%	(\$2,205.10)	1,326.63	1,326.63	METAL_ARCFURN-Process Heating-7PLN-v5-1
Metal Mfg	Process	Paper: Premium Control Large Material	employee	Existing	210.38	10	\$108.58	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	168.51	10	\$35.77	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	168.51	10	\$14.66	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1

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Metal Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	3,019.23	10	\$296.77	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	Existing	1.89	5	\$0.25	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	26.95	1	\$1.13	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	Existing	75.21	10	\$58.71	15%	15%	\$17.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	Existing	160.41	10	\$58.71	15%	15%	\$17.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	6.08	10	\$58.71	15%	15%	\$17.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	20.85	10	\$58.71	15%	15%	\$17.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.86	10	\$58.71	15%	15%	\$17.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	Existing	139.07	10	\$58.71	15%	15%	\$17.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	Existing	84.25	10	\$58.71	15%	15%	\$17.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	12.43	10	\$58.71	15%	15%	\$17.49	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	Existing	217.28	3	\$117.82	3%	11%	\$29.39	1.02	1.04	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	Existing	463.40	3	\$117.82	3%	11%	\$29.39	0.78	0.78	IND_SEM-HVAC-AEG-1
Metal Mfg	Ventilation	Strategic Energy Management	employee	Existing	17.57	3	\$117.82	3%	11%	\$29.39	0.47	0.47	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	60.23	3	\$117.82	3%	11%	\$29.39	1.40	1.47	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	14.03	3	\$117.82	3%	11%	\$29.39	0.35	0.36	IND_SEM-Lighting-AEG-1

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Metal Mfg	Motors	Strategic Energy Management	employee	Existing	401.76	3	\$117.82	3%	11%	\$29.39	10.97	10.97	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	Existing	243.40	3	\$117.82	3%	11%	\$29.39	6.65	6.65	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	35.92	3	\$117.82	3%	11%	\$29.39	1.69	1.38	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	Existing	69.50	3	\$396.38	0%	0%	\$163.37	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	Existing	16.19	3	\$396.38	0%	0%	\$163.37	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	Existing	463.57	3	\$396.38	0%	0%	\$163.37	0.00	0.00	IND_SEM-HVAC-AEG-1
Metal Mfg	Process	Commissioning	employee	Existing	280.85	3	\$396.38	0%	0%	\$163.37	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	Existing	41.45	3	\$396.38	0%	0%	\$163.37	0.00	0.00	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	Existing	69.50	3	\$251.63	5%	39%	\$103.71	27.46	28.89	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	16.19	3	\$251.63	5%	39%	\$103.71	6.95	7.14	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	Existing	463.57	3	\$251.63	5%	39%	\$103.71	215.23	215.23	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	Existing	280.85	3	\$251.63	5%	39%	\$103.71	130.39	130.39	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	Existing	41.45	3	\$251.63	5%	39%	\$103.71	33.19	27.11	IND_RCX-Process-AEG-1
Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	33.44	12	\$18.25	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	556.93	11	\$433.97	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1

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Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	Existing	290.57	20	\$145.28	0%	63%	\$45.19	897.40	897.40	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	Existing	176.04	20	\$145.28	0%	63%	\$45.19	543.67	543.67	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	3.95	3.96	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	2.69	2.69	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	1.58	1.58	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	1.54	1.54	Building Energy Simulation Tool
Metal Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.11	0.11	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.07	0.07	Building Energy Simulation Tool
Metal Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.03	0.03	Building Energy Simulation Tool

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Metal Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	1.80	1.80	Building Energy Simulation Tool
Metal Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	1.05	1.05	Building Energy Simulation Tool
Metal Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.49	0.49	Building Energy Simulation Tool
Metal Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.25	0.25	Building Energy Simulation Tool
Metal Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.15	0.15	Building Energy Simulation Tool
Metal Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.50	0.50	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	5.96	5.96	AEG-BEST
Metal Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	2.89	2.89	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Metal Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.54	0.54	CHLR_VSPMP-Cooling-SCE-17_R0-86
Metal Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	1.70	1.70	AEG-BEST
Metal Mfg	Cooling	HVAC - Economizer	sqft	New	0.46	5	\$0.40	18%	30%	\$212.76	0.92	0.93	AEG-BEST
Metal Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.32	0.32	VENT_DCV-Ventilation-7PLN-v5-5
Metal Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	11.04	11.07	HVLS-Cooling-AEG-1
Metal Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	14.57	14.57	HVLS-Heating-AEG-1
Metal Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.13	0.14	RTU_MNT-Cooling-PGE-R2-1
Metal Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	3.16	3.16	STAT_WIFI-All-7PLN-v2-1

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Metal Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	2.15	2.15	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	1.26	1.26	STAT_WIFI-AII-7PLN-v2-1
Metal Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.27	15	\$0.36	22%	41%	\$163.23	35.13	35.31	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.38	15	\$0.60	22%	41%	\$192.37	49.18	49.43	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Metal Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.09	0.09	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Metal Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Metal Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Metal Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	2.85	2.88	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Metal Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	4.04	4.07	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	2.80	2.84	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Metal Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	2.15	2.18	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Metal Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	2.17	2.21	CLTG_EXT_PV-Exterior Lighting-AEG-2
Metal Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	7,232.69	20	\$2,486.63	15%	20%	\$36.88	11.94	11.94	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Metal Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	23.86	15	\$23.91	20%	50%	\$122.12	2.43	2.43	RFG_FHPC-Refrigeration-RTF-v1.3-23

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Metal Mfg	Process	Refrigeration - System Optimization	employee	New	38.18	15	\$16.73	20%	50%	\$53.42	3.89	3.89	AEG Research - prior study
Metal Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	247.53	10	\$36.29	9%	38%	\$55.29	16.81	16.81	PUMP_EQPT-Motors-7PLN-v5-1
Metal Mfg	Motors	Pumping System - System Optimization	employee	New	185.64	12	\$55.31	9%	38%	(\$25.77)	18.03	18.03	PUMP_SYSOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	185.64	10	\$57.65	9%	38%	\$46.53	16.01	16.01	PUMP_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Fan System - Equipment Upgrade	employee	New	65.02	10	\$6.54	9%	38%	\$48.38	4.42	4.42	FAN_EQPTF-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Flow Optimization	employee	New	76.84	10	\$10.82	9%	38%	\$17.76	6.63	6.63	FAN_FLOWOPT-Motors-UN-v1.0-5
Metal Mfg	Motors	Fan System - Variable Speed Drive	employee	New	118.22	10	\$54.53	9%	38%	\$69.11	10.19	10.19	FAN_VSD-Motors-UN-v1.0-5
Metal Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	437.58	10	\$32.85	17%	50%	\$39.01	34.68	34.68	CMPAIR_EQPT-Motors-7PLN-v5-2
Metal Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	4.41	4.41	CMPAIR_HTCPMPDES DRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.17	0.17	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	500.09	10	\$54.10	9%	15%	\$16.21	9.08	9.08	E3T
Metal Mfg	Motors	Compressed Air - System Controls	employee	New	100.02	10	\$23.49	9%	38%	\$2.98	8.62	8.62	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Leak Management Program	employee	New	250.04	10	\$23.61	18%	75%	\$41.91	33.97	33.97	CMPAIR_LEAK-Motors-7PLN-v5-1
Metal Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	187.53	15	\$144.26	26%	45%	\$93.77	14.35	14.35	CMPAIR_VSD-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	6.25	10	\$2.22	17%	50%	\$53.10	0.50	0.50	CMPAIR_LPFILT-Motors-ILTRM-v4.0-1

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Metal Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	37.51	10	\$7.21	17%	50%	\$28.82	2.97	2.97	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	14.40	14.40	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Metal Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	37.51	15	\$19.84	17%	50%	\$64.46	4.27	4.27	CMPAIR_STORAGE-Motors-UN-v1.0-3
Metal Mfg	Motors	Compressed Air - End Use Optimization	employee	New	350.06	6	\$54.17	26%	45%	\$32.53	13.95	13.95	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Metal Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	1,130.84	10	\$397.93	25%	45%	\$52.72	68.43	68.43	MATHAND_VSD-Material Handling-7PLN-v5-2
Metal Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	16.69	10	\$7.05	10%	50%	\$63.27	10.10	10.10	MTR_GRWND<100HP-Motors-7PLN-v5-17
Metal Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	9.27	10	\$2.50	6%	25%	\$40.42	2.66	2.66	MTR_GRWND>100HP-Motors-7PLN-v5-25
Metal Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	139.07	12	\$30.93	16%	25%	\$30.51	22.52	22.52	2015-mdu-irp-report--volume-iii.pdf
Metal Mfg	Motors	Motors - Synchronous Belts	employee	New	37.09	10	\$9.31	16%	36%	\$37.60	8.82	8.82	DRV_SYNBELT-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	32,823.63	10	\$4,082.17	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	48,026.91	15	\$11,033.49	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Metal Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	14,336.02	10	\$604.92	0%	0%	\$6.32	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Metal Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	15,525.75	1	\$54.66	0%	0%	\$3.42	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Metal Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	6,018.72	2	\$14.74	0%	0%	\$1.26	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1

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Metal Mfg	Process	Dairy - Milk Precoolers	employee	New	159.09	15	\$76.08	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Metal Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.38	15	\$3.94	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Metal Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	85.41	15	\$11.03	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Metal Mfg	Motors	Automatic Milker Takeoffs	Cows	New	400.19	10	\$4,001.87	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Metal Mfg	Process	Clean Room: Change Filter Strategy	employee	New	242.34	15	\$1.84	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Chiller Optimize	employee	New	47.16	15	\$4.51	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Metal Mfg	Process	Clean Room: Clean Room HVAC	employee	New	28.64	15	\$5.44	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	28.64	15	\$17.08	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	30.29	15	\$6.63	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	60.59	15	\$32.00	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1
Metal Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	60.59	15	\$0.64	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Metal Mfg	Motors	Panel: Hydraulic Press	employee	New	1,690.77	10	\$397.70	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Metal Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	1,751.16	10	\$29.78	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Metal Mfg	Process	Metal: New Arc Furnace	employee	New	1,619.20	10	\$175.36	15%	75%	(\$2,205.10)	413.53	413.53	METAL_ARCFURN-Process Heating-7PLN-v5-1

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Metal Mfg	Process	Paper: Premium Control Large Material	employee	New	210.38	10	\$108.58	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Metal Mfg	Process	Paper: Efficient Pulp Screen	employee	New	168.51	10	\$35.77	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Metal Mfg	Process	Kraft: Effluent Treatment System	employee	New	168.51	10	\$14.66	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Metal Mfg	Motors	Kraft: Efficient Agitator	employee	New	3,019.23	10	\$296.77	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Metal Mfg	Process	Mech Pulp: Premium Process	employee	New	1.89	5	\$0.25	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Metal Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	26.95	1	\$1.13	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Metal Mfg	Cooling	Transformer - High Efficiency	employee	New	80.14	10	\$58.71	15%	15%	\$17.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Heating	Transformer - High Efficiency	employee	New	162.29	10	\$58.71	15%	15%	\$17.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Ventilation	Transformer - High Efficiency	employee	New	5.88	10	\$58.71	15%	15%	\$17.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	17.71	10	\$58.71	15%	15%	\$17.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	4.54	10	\$58.71	15%	15%	\$17.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Motors	Transformer - High Efficiency	employee	New	139.07	10	\$58.71	15%	15%	\$17.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Process	Transformer - High Efficiency	employee	New	84.25	10	\$58.71	15%	15%	\$17.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	12.22	10	\$58.71	15%	15%	\$17.28	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Metal Mfg	Cooling	Strategic Energy Management	employee	New	231.51	3	\$117.82	3%	11%	\$29.03	0.05	0.05	IND_SEM-HVAC-AEG-1
Metal Mfg	Heating	Strategic Energy Management	employee	New	468.85	3	\$117.82	3%	11%	\$29.03	0.04	0.04	IND_SEM-HVAC-AEG-1

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Metal Mfg	Ventilation	Strategic Energy Management	employee	New	17.00	3	\$117.82	3%	11%	\$29.03	0.02	0.02	IND_SEM-HVAC-AEG-1
Metal Mfg	Interior Lighting	Strategic Energy Management	employee	New	51.16	3	\$117.82	3%	11%	\$29.03	0.06	0.06	IND_SEM-Lighting-AEG-1
Metal Mfg	Exterior Lighting	Strategic Energy Management	employee	New	13.11	3	\$117.82	3%	11%	\$29.03	0.02	0.02	IND_SEM-Lighting-AEG-1
Metal Mfg	Motors	Strategic Energy Management	employee	New	401.76	3	\$117.82	3%	11%	\$29.03	0.51	0.51	IND_SEM-Motors-AEG-1
Metal Mfg	Process	Strategic Energy Management	employee	New	243.40	3	\$117.82	3%	11%	\$29.03	0.31	0.31	IND_SEM-Process-AEG-1
Metal Mfg	Miscellaneous	Strategic Energy Management	employee	New	35.30	3	\$117.82	3%	11%	\$29.03	0.07	0.05	IND_SEM-Process-AEG-1
Metal Mfg	Interior Lighting	Commissioning	employee	New	59.03	3	\$396.38	5%	39%	\$164.97	2.17	2.19	IND_SEM-HVAC-AEG-1
Metal Mfg	Exterior Lighting	Commissioning	employee	New	15.13	3	\$396.38	5%	39%	\$164.97	0.56	0.57	IND_SEM-HVAC-AEG-1
Metal Mfg	Motors	Commissioning	employee	New	463.57	3	\$396.38	5%	39%	\$164.97	29.24	29.24	IND_SEM-HVAC-AEG-1
Metal Mfg	Process	Commissioning	employee	New	280.85	3	\$396.38	5%	39%	\$164.97	17.72	17.72	IND_SEM-Lighting-AEG-1
Metal Mfg	Miscellaneous	Commissioning	employee	New	40.73	3	\$396.38	5%	39%	\$164.97	1.55	1.29	IND_SEM-Lighting-AEG-1
Metal Mfg	Interior Lighting	Retrocommissioning	employee	New	59.03	3	\$251.63	0%	0%	\$104.73	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Exterior Lighting	Retrocommissioning	employee	New	15.13	3	\$251.63	0%	0%	\$104.73	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Motors	Retrocommissioning	employee	New	463.57	3	\$251.63	0%	0%	\$104.73	0.00	0.00	IND_RCX-Motors-AEG-1
Metal Mfg	Process	Retrocommissioning	employee	New	280.85	3	\$251.63	0%	0%	\$104.73	0.00	0.00	IND_RCX-Process-AEG-1
Metal Mfg	Miscellaneous	Retrocommissioning	employee	New	40.73	3	\$251.63	0%	0%	\$104.73	0.00	0.00	IND_RCX-Process-AEG-1

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Metal Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	33.44	12	\$18.25	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Metal Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Metal Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	556.93	11	\$433.97	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Metal Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Metal Mfg	Motors	WHP - ORC	employee	New	290.57	20	\$145.28	0%	63%	\$45.19	335.41	335.41	WHP Analysis
Metal Mfg	Process	WHP - ORC	employee	New	176.04	20	\$145.28	0%	63%	\$45.19	203.20	203.20	WHP Analysis
Metal Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Metal Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	Existing	0.21	45	\$0.84	15%	25%	\$119.79	10.30	10.47	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	Existing	0.43	45	\$0.84	15%	25%	\$119.79	7.53	7.56	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	Existing	0.02	45	\$0.84	15%	25%	\$119.79	4.54	4.59	Building Energy Simulation Tool

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Misc. Mfg	Cooling	Insulation - Ducting	sqft	Existing	0.08	20	\$0.86	15%	25%	\$929.85	4.02	4.08	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	Existing	0.02	20	\$0.86	15%	25%	\$929.85	0.32	0.32	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	Existing	0.00	20	\$0.86	15%	25%	\$929.85	0.19	0.19	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	Existing	0.00	45	\$0.32	45%	50%	\$50.10	0.08	0.08	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	Existing	0.58	45	\$0.32	45%	50%	\$50.10	5.02	5.04	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	Existing	0.02	45	\$0.32	45%	50%	\$50.10	3.03	3.06	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	Existing	0.03	18	\$0.00	15%	25%	\$1.94	1.29	1.32	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	Existing	0.04	18	\$0.00	15%	25%	\$1.94	0.71	0.71	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	Existing	0.00	18	\$0.00	15%	25%	\$1.94	0.43	0.43	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	Existing	0.08	10	\$0.01	15%	45%	\$19.45	3.30	3.35	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	Existing	0.43	15	\$0.37	15%	60%	\$107.43	27.47	27.95	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	Existing	0.16	15	\$0.04	15%	75%	\$31.39	13.34	13.57	CHLR_WC_VSCTFAN-Cooling-NJTRM-31
Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	Existing	0.08	15	\$0.37	15%	60%	\$619.93	2.47	2.53	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	Existing	0.34	10	\$0.02	15%	60%	\$26.33	11.09	11.36	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	Existing	0.02	5	\$0.40	18%	30%	\$4,076.53	11.87	12.17	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	Existing	0.00	15	\$0.23	15%	35%	\$10,840.19	1.54	1.57	VENT_DCV-Ventilation-7PLN-v5-5

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Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	Existing	0.27	15	\$0.65	15%	50%	\$60.09	48.01	49.18	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	Existing	1.06	15	\$0.65	15%	50%	\$60.09	68.03	68.39	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	Existing	0.02	3	\$0.07	15%	75%	\$1,413.63	3.38	3.48	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.39	5	\$0.75	5%	15%	\$148.65	19.10	19.42	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.80	5	\$0.75	5%	15%	\$148.65	13.97	14.02	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	Existing	0.03	5	\$0.75	5%	15%	\$148.65	8.43	8.50	STAT_WIFI-All-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	Existing	0.02	15	\$0.36	7%	33%	\$2,666.93	70.73	75.30	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	Existing	0.03	15	\$0.60	7%	33%	\$3,143.16	99.02	105.42	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	Existing	0.02	15	\$0.00	1%	2%	\$12.85	0.34	0.37	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	Existing	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	Existing	0.00	15	\$1.04	15%	23%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11
Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	Existing	0.05	11	\$0.00	15%	50%	\$8.38	13.08	13.34	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	Existing	0.05	16	\$1.87	5%	40%	\$4,723.87	13.39	13.66	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	Existing	0.07	9	\$0.04	15%	25%	\$88.88	15.76	16.41	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3

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Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	Existing	0.04	8	\$0.02	33%	60%	\$99.28	22.98	23.92	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	Existing	0.05	7	\$1.22	15%	30%	\$5,344.50	15.71	16.35	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	Existing	2,886.06	20	\$992.24	15%	20%	\$36.88	30.43	30.43	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	Existing	19.12	15	\$19.16	20%	50%	\$122.12	8.21	8.21	RFG_FHPC-Refrigeration-RTF-v1.3-23
Misc. Mfg	Process	Refrigeration - System Optimization	employee	Existing	30.59	15	\$13.41	20%	50%	\$53.42	13.13	13.13	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	Existing	134.12	10	\$19.67	9%	38%	\$55.29	55.16	55.16	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	Existing	100.59	12	\$29.97	9%	38%	(\$25.77)	40.68	40.68	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	Existing	100.59	10	\$31.24	9%	38%	\$46.53	40.68	40.68	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	Existing	48.91	10	\$4.92	9%	38%	\$48.38	20.11	20.11	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	Existing	57.80	10	\$8.14	9%	38%	\$17.76	23.37	23.37	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	Existing	88.92	10	\$41.01	9%	38%	\$69.11	35.96	35.96	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	Existing	164.46	10	\$12.35	17%	50%	\$39.01	78.91	78.91	CMPAIR_EQPT-Motors-7PLN-v5-2
Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	Existing	53.00	15	\$94.84	16%	38%	\$218.12	5.84	5.84	CMPAIR_HTCPDESDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	Existing	5.24	10	\$20.84	16%	30%	\$595.79	0.39	0.39	CMPAIR_RFRGDTRY-Motors-MEMD-v. 2014-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	Existing	187.95	10	\$20.33	9%	15%	\$16.21	16.00	16.00	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	Existing	37.59	10	\$8.83	9%	38%	\$2.98	15.20	15.20	CMPAIR_SYSCtrl-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	Existing	93.97	10	\$8.87	18%	75%	\$41.91	77.30	77.30	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	Existing	70.48	15	\$54.22	26%	45%	\$93.77	19.00	19.00	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	Existing	2.35	10	\$0.83	17%	50%	\$53.10	1.13	1.13	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	Existing	14.10	10	\$2.71	17%	50%	\$28.82	6.76	6.76	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	Existing	109.80	20	\$5.21	17%	50%	\$5.09	19.14	19.14	CMPAIR_OAIN-Motors-MEMD-v.2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	Existing	14.10	15	\$7.46	17%	50%	\$64.46	6.76	6.76	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	Existing	131.56	6	\$20.36	26%	45%	\$32.53	35.47	35.47	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	Existing	234.76	10	\$82.61	25%	45%	\$52.72	66.62	66.62	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	Existing	5.44	10	\$2.30	10%	50%	\$63.27	15.43	15.43	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	Existing	3.02	10	\$0.81	6%	25%	\$40.42	4.07	4.07	MTR_GRWND>100HP-Motors-7PLN-v5-25
Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	Existing	45.31	12	\$10.08	16%	25%	\$30.51	30.54	30.54	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	Existing	12.08	10	\$3.03	16%	36%	\$37.60	17.39	17.39	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	Existing	13,097.61	10	\$1,628.91	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1

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Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	Existing	19,164.18	15	\$4,402.69	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	Existing	3,884.06	10	\$604.92	0%	0%	\$23.34	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	Existing	6,195.24	1	\$54.66	0%	0%	\$8.57	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	Existing	2,401.65	2	\$14.74	0%	0%	\$3.15	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	Existing	127.47	15	\$60.96	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	Existing	30.26	15	\$3.92	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	Existing	57.76	15	\$7.46	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	Existing	216.85	10	\$2,168.46	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	Existing	39.26	15	\$0.30	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	Existing	37.79	15	\$3.61	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	Existing	22.94	15	\$4.36	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	Existing	22.94	15	\$13.69	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	Existing	4.91	15	\$1.07	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	Existing	9.81	15	\$5.18	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJ-Heating-7PLN-v5-1

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Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	Existing	9.81	15	\$0.10	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGASP-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	Existing	351.00	10	\$82.56	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	Existing	363.53	10	\$6.18	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	Existing	436.95	10	\$47.32	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	Existing	63.13	10	\$32.58	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	Existing	50.57	10	\$10.73	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	Existing	50.57	10	\$4.40	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	Existing	626.78	10	\$61.61	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	Existing	0.57	5	\$0.08	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPRO C-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	Existing	5.59	1	\$0.24	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	Existing	85.75	10	\$44.08	15%	15%	\$17.56	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	Existing	182.89	10	\$44.08	15%	15%	\$17.56	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	Existing	6.94	10	\$44.08	15%	15%	\$17.56	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	Existing	17.30	10	\$44.08	15%	15%	\$17.56	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	Existing	4.03	10	\$44.08	15%	15%	\$17.56	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Misc. Mfg	Motors	Transformer - High Efficiency	employee	Existing	45.31	10	\$44.08	15%	15%	\$17.56	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	Existing	25.28	10	\$44.08	15%	15%	\$17.56	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	Existing	9.92	10	\$44.08	15%	15%	\$17.56	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	Existing	247.73	3	\$88.46	3%	11%	\$29.50	1.16	1.18	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	Existing	528.35	3	\$88.46	3%	11%	\$29.50	0.88	0.89	IND_SEM-HVAC-AEG-1
Misc. Mfg	Ventilation	Strategic Energy Management	employee	Existing	20.04	3	\$88.46	3%	11%	\$29.50	0.53	0.53	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	Existing	49.99	3	\$88.46	3%	11%	\$29.50	1.16	1.22	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	Existing	11.64	3	\$88.46	3%	11%	\$29.50	0.29	0.30	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	Existing	130.90	3	\$88.46	3%	11%	\$29.50	3.56	3.56	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	Existing	73.04	3	\$88.46	3%	11%	\$29.50	1.98	1.98	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	Existing	28.67	3	\$88.46	3%	11%	\$29.50	1.34	1.10	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	Existing	57.68	3	\$147.04	0%	0%	\$154.27	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	Existing	13.44	3	\$147.04	0%	0%	\$154.27	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	Existing	151.04	3	\$147.04	0%	0%	\$154.27	0.00	0.00	IND_SEM-HVAC-AEG-1
Misc. Mfg	Process	Commissioning	employee	Existing	84.28	3	\$147.04	0%	0%	\$154.27	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	Existing	33.08	3	\$147.04	0%	0%	\$154.27	0.00	0.00	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	Existing	57.68	3	\$93.34	5%	39%	\$97.94	22.67	23.85	IND_RCX-Motors-AEG-1

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Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	Existing	13.44	3	\$93.34	5%	39%	\$97.94	5.74	5.90	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	Existing	151.04	3	\$93.34	5%	39%	\$97.94	69.76	69.76	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	Existing	84.28	3	\$93.34	5%	39%	\$97.94	38.93	38.93	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	Existing	33.08	3	\$93.34	5%	39%	\$97.94	26.35	21.52	IND_RCX-Process-AEG-1
Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	Existing	18.12	12	\$9.89	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	Existing	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	Existing	301.78	11	\$235.15	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	Existing	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

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Misc. Mfg	Process	WHP - Conveyor Regen	employee	Existing	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Cooling	Insulation - Ceiling	sqft	New	0.23	45	\$0.84	15%	25%	\$115.50	4.48	4.49	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ceiling	sqft	New	0.44	45	\$0.84	15%	25%	\$115.50	3.06	3.06	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ceiling	sqft	New	0.02	45	\$0.84	15%	25%	\$115.50	1.79	1.79	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Ducting	sqft	New	0.09	20	\$0.86	15%	25%	\$870.52	1.75	1.75	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Ducting	sqft	New	0.02	20	\$0.86	15%	25%	\$870.52	0.13	0.13	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Ducting	sqft	New	0.00	20	\$0.86	15%	25%	\$870.52	0.08	0.08	Building Energy Simulation Tool
Misc. Mfg	Cooling	Insulation - Wall Cavity	sqft	New	0.00	45	\$0.32	45%	50%	\$49.23	0.03	0.03	Building Energy Simulation Tool
Misc. Mfg	Heating	Insulation - Wall Cavity	sqft	New	0.59	45	\$0.32	45%	50%	\$49.23	2.04	2.04	Building Energy Simulation Tool
Misc. Mfg	Ventilation	Insulation - Wall Cavity	sqft	New	0.02	45	\$0.32	45%	50%	\$49.23	1.19	1.19	Building Energy Simulation Tool
Misc. Mfg	Cooling	HVAC - Duct Repair and Sealing	sqft	New	0.03	18	\$0.00	15%	25%	\$1.86	0.55	0.56	Building Energy Simulation Tool
Misc. Mfg	Heating	HVAC - Duct Repair and Sealing	sqft	New	0.04	18	\$0.00	15%	25%	\$1.86	0.28	0.28	Building Energy Simulation Tool
Misc. Mfg	Ventilation	HVAC - Duct Repair and Sealing	sqft	New	0.00	18	\$0.00	15%	25%	\$1.86	0.17	0.17	Building Energy Simulation Tool
Misc. Mfg	Cooling	Chiller - Chilled Water Reset	sqft	New	0.08	10	\$0.01	15%	45%	\$18.92	0.56	0.56	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Flow Chilled Water Pump	sqft	New	0.43	15	\$0.37	15%	60%	\$104.52	6.76	6.76	AEG-BEST
Misc. Mfg	Cooling	Chiller - Variable Speed Fans	sqft	New	0.16	15	\$0.04	15%	75%	\$30.54	3.28	3.28	CHLR_WC_VSCTFAN-Cooling-NJTRM-31

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Misc. Mfg	Cooling	Water-Cooled Chiller - Variable Flow Condenser Water Pump	sqft	New	0.08	15	\$0.37	15%	60%	\$597.94	0.62	0.62	CHLR_VSPMP-Cooling-SCE-17_R0-86
Misc. Mfg	Cooling	Water-Cooled Chiller - Condenser Water Temperature Reset	sqft	New	0.34	10	\$0.02	15%	60%	\$25.40	1.93	1.93	AEG-BEST
Misc. Mfg	Cooling	HVAC - Economizer	sqft	New	0.03	5	\$0.40	18%	30%	\$3,790.45	1.05	1.05	AEG-BEST
Misc. Mfg	Ventilation	Ventilation - Demand Controlled	sqft	New	0.00	15	\$0.23	15%	35%	\$11,063.12	0.36	0.36	VENT_DCV-Ventilation-7PLN-v5-5
Misc. Mfg	Cooling	Destratification Fans (HVLS)	sqft	New	0.28	15	\$0.65	15%	50%	\$58.29	12.53	12.56	HVLS-Cooling-AEG-1
Misc. Mfg	Heating	Destratification Fans (HVLS)	sqft	New	1.07	15	\$0.65	15%	50%	\$58.29	16.53	16.53	HVLS-Heating-AEG-1
Misc. Mfg	Cooling	RTU - Maintenance	sqft	New	0.02	3	\$0.07	15%	75%	\$1,290.43	0.15	0.15	RTU_MNT-Cooling-PGE-R2-1
Misc. Mfg	Cooling	Thermostat - Wi-Fi/Interactive	sqft	New	0.42	5	\$0.75	5%	15%	\$143.31	3.58	3.59	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Heating	Thermostat - Wi-Fi/Interactive	sqft	New	0.81	5	\$0.75	5%	15%	\$143.31	2.44	2.44	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Ventilation	Thermostat - Wi-Fi/Interactive	sqft	New	0.03	5	\$0.75	5%	15%	\$143.31	1.43	1.43	STAT_WIFI-AII-7PLN-v2-1
Misc. Mfg	Interior Lighting	Interior Lighting - Embedded Fixture Controls	sqft	New	0.02	15	\$0.36	22%	41%	\$2,908.04	29.00	29.15	CLTG_CTRL_UNIT-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - Networked Fixture Controls	sqft	New	0.02	15	\$0.60	22%	41%	\$3,427.33	40.61	40.81	CLTG_CTRL_NET-Interior Lighting-7PLN-v6-1
Misc. Mfg	Interior Lighting	Interior Lighting - LEC Exit Lighting	sqft	New	0.02	15	\$0.00	1%	2%	\$13.97	0.07	0.07	CLTG_EXITLEC-Interior Lighting-7PLN-v2-3
Misc. Mfg	Interior Lighting	Interior Lighting - Photoluminescent Exit Lighting	sqft	New	0.00	15	\$0.00	1%	2%	\$0.00	0.00	0.00	CLTG_EXITPHOTOLUM-Interior Lighting-AEG-1
Misc. Mfg	Interior Lighting	Interior Lighting - Skylights	sqft	New	0.00	15	\$1.04	18%	24%	\$0.00	0.00	0.00	CLTG_SKY-Interior Lighting-RSRCH-11

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Misc. Mfg	Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	sqft	New	0.05	11	\$0.00	15%	50%	\$8.47	2.35	2.38	CLTG_DLMPa-Interior Lighting-ILTRM-v4.0-1
Misc. Mfg	Interior Lighting	Interior Fluorescent - Bi-Level Stairwell Fixture	sqft	New	0.05	16	\$1.87	5%	40%	\$4,772.05	3.33	3.36	CLTG_BILVL-Interior Lighting-7PLN-v3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Bi-Level Parking Garage Fixture	sqft	New	0.06	9	\$0.04	15%	25%	\$91.88	2.31	2.35	CLTG_EXT_BILVL-Exterior Lighting-7PLN-v6-3
Misc. Mfg	Exterior Lighting	Exterior Lighting - Enhanced Controls	sqft	New	0.03	8	\$0.02	44%	60%	\$102.63	1.77	1.80	CLTG_EXT_DAY-Exterior Lighting-PGE-R3-1
Misc. Mfg	Exterior Lighting	Exterior Lighting - Photovoltaic Installation	sqft	New	0.04	7	\$1.22	15%	30%	\$5,524.86	1.80	1.83	CLTG_EXT_PV-Exterior Lighting-AEG-2
Misc. Mfg	Miscellaneous	High Efficiency Battery Chargers	Unit	New	2,886.06	20	\$992.24	15%	20%	\$36.88	9.48	9.48	HF_BATTCHARGE-Miscellaneous-MEMD-v. 2014-2
Misc. Mfg	Process	Refrigeration - Floating Head Pressure	employee	New	19.12	15	\$19.16	20%	50%	\$122.12	1.94	1.94	RFG_FHPC-Refrigeration-RTF-v1.3-23
Misc. Mfg	Process	Refrigeration - System Optimization	employee	New	30.59	15	\$13.41	20%	50%	\$53.42	3.10	3.10	AEG Research - prior study
Misc. Mfg	Motors	Pumping System - Equipment Upgrade	employee	New	134.12	10	\$19.67	9%	38%	\$55.29	9.06	9.06	PUMP_EQPT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Pumping System - System Optimization	employee	New	100.59	12	\$29.97	9%	38%	(\$25.77)	9.72	9.72	PUMP_SYSOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Pumping System - Variable Speed Drive	employee	New	100.59	10	\$31.24	9%	38%	\$46.53	8.63	8.63	PUMP_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Fan System - Equipment Upgrade	employee	New	48.91	10	\$4.92	9%	38%	\$48.38	3.30	3.30	FAN_EQPTF-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Flow Optimization	employee	New	57.80	10	\$8.14	9%	38%	\$17.76	4.96	4.96	FAN_FLOWOPT-Motors-UN-v1.0-5
Misc. Mfg	Motors	Fan System - Variable Speed Drive	employee	New	88.92	10	\$41.01	9%	38%	\$69.11	7.63	7.63	FAN_VSD-Motors-UN-v1.0-5
Misc. Mfg	Motors	Compressed Air - Equipment Upgrade	employee	New	164.46	10	\$12.35	17%	50%	\$39.01	12.97	12.97	CMPAIR_EQPT-Motors-7PLN-v5-2

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Misc. Mfg	Motors	Compressed Air - Heat of Compression Dessicant Dryer	SCFM air	New	53.00	15	\$94.84	16%	38%	\$218.12	1.65	1.65	CMPAIR_HTCMPDESDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Refrigerated Cycling Dryers	SCFM air	New	5.24	10	\$20.84	16%	30%	\$595.79	0.06	0.06	CMPAIR_RFRGDRY-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Raise Compressed Air Dryer Dewpoint	employee	New	187.95	10	\$20.33	9%	15%	\$16.21	3.39	3.39	E3T
Misc. Mfg	Motors	Compressed Air - System Controls	employee	New	37.59	10	\$8.83	9%	38%	\$2.98	3.22	3.22	CMPAIR_SYSCTRL-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Leak Management Program	employee	New	93.97	10	\$8.87	18%	75%	\$41.91	12.70	12.70	CMPAIR_LEAK-Motors-7PLN-v5-1
Misc. Mfg	Motors	Compressed Air - Variable Speed Drive	employee	New	70.48	15	\$54.22	26%	45%	\$93.77	5.37	5.37	CMPAIR_VSD-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Low Pressure-Drop Filters	employee	New	2.35	10	\$0.83	17%	50%	\$53.10	0.19	0.19	CMPAIR_LPDFILT-Motors-ILTRM-v4.0-1
Misc. Mfg	Motors	Compressed Air - Zero-Loss Condensate Drain	employee	New	14.10	10	\$2.71	17%	50%	\$28.82	1.11	1.11	CMPAIR_NOLOSSDRAIN-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - Outside Air Intake	SCFM air	New	109.80	20	\$5.21	17%	50%	\$5.09	5.38	5.38	CMPAIR_OAIN-Motors-MEMD-v. 2014-1
Misc. Mfg	Motors	Compressed Air - Receiver Capacity Addition	employee	New	14.10	15	\$7.46	17%	50%	\$64.46	1.60	1.60	CMPAIR_STORAGE-Motors-UN-v1.0-3
Misc. Mfg	Motors	Compressed Air - End Use Optimization	employee	New	131.56	6	\$20.36	26%	45%	\$32.53	5.22	5.22	CMPAIR_ENDUSEOPT-Motors-UN-v1.0-1
Misc. Mfg	Motors	Material Handling - Variable Speed Drive	employee	New	234.76	10	\$82.61	25%	45%	\$52.72	14.13	14.13	MATHAND_VSD-Material Handling-7PLN-v5-2
Misc. Mfg	Motors	Motors - Green Rewind (<100 HP)	employee	New	5.44	10	\$2.30	10%	50%	\$63.27	3.27	3.27	MTR_GRWND<100HP-Motors-7PLN-v5-17
Misc. Mfg	Motors	Motors - Green Rewind (100 HP+)	employee	New	3.02	10	\$0.81	6%	25%	\$40.42	0.86	0.86	MTR_GRWND>100HP-Motors-7PLN-v5-25

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Misc. Mfg	Motors	Switch from Belt Drive to Direct Drive	employee	New	45.31	12	\$10.08	16%	25%	\$30.51	7.30	7.30	2015-mdu-irp-report--volume-iii.pdf
Misc. Mfg	Motors	Motors - Synchronous Belts	employee	New	12.08	10	\$3.03	16%	36%	\$37.60	2.86	2.86	DRV_SYNBELT-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Engine Block Heater Controls	Unit	New	13,097.61	10	\$1,628.91	0%	0%	\$18.63	0.00	0.00	AGR_ENGBLCTRL-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Circulating Engine Block Heater	unit	New	19,164.18	15	\$4,402.69	0%	0%	\$28.00	0.00	0.00	ENGBLOCKHEAT_CIRC-Miscellaneous-CALTF-v2-100
Misc. Mfg	Motors	Agriculture - Efficient Stock Watering Tanks	unit	New	3,884.06	10	\$604.92	0%	0%	\$23.34	0.00	0.00	HE_WATERER-Agricultural-RTF-v3.0PreQC-1
Misc. Mfg	Miscellaneous	Agriculture - Stock Tank De-Icer	unit	New	6,195.24	1	\$54.66	0%	0%	\$8.57	0.00	0.00	AGTANK_DEICE-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Miscellaneous	Agriculture - Thermostatically Controlled Outlets	unit	New	2,401.65	2	\$14.74	0%	0%	\$3.15	0.00	0.00	AGOUTLET_TSTAT-Miscellaneous-RTF-v1.1-1
Misc. Mfg	Process	Dairy - Milk Precoolers	employee	New	127.47	15	\$60.96	0%	0%	\$58.29	0.00	0.00	HE_WATERER-Agricultural-OPATRM-v1-1
Misc. Mfg	Miscellaneous	Dairy - Heat Recovery from Refrigeration	Milk1000Gal	New	30.26	15	\$3.92	0%	0%	\$15.81	0.00	0.00	DAIRY_HTRECOV-Water Heating-7PLN-v2-1
Misc. Mfg	Motors	Dairy - Variable Speed Milk Vacuum Pump	Milk1000Gal	New	57.76	15	\$7.46	0%	0%	\$15.74	0.00	0.00	PUMP_VSD-Motors-7PLN-v2-2
Misc. Mfg	Motors	Automatic Milker Takeoffs	Cows	New	216.85	10	\$2,168.46	0%	0%	\$1,498.31	0.00	0.00	DAIRY_AUTOTAKEOFF-Agricultural-PATRM-2016-1
Misc. Mfg	Process	Clean Room: Change Filter Strategy	employee	New	39.26	15	\$0.30	0%	0%	\$0.93	0.00	0.00	CLEANRM_FILTER-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Chiller Optimize	employee	New	37.79	15	\$3.61	0%	0%	\$11.64	0.00	0.00	CLEANRM_CHLROPT-Cooling-7PLN-v5-1
Misc. Mfg	Process	Clean Room: Clean Room HVAC	employee	New	22.94	15	\$4.36	0%	0%	\$23.15	0.00	0.00	CLEANRM_HVAC-Cooling-7PLN-v5-1

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Misc. Mfg	Process	Elec Chip Fab: Solidstate Chiller	employee	New	22.94	15	\$13.69	0%	0%	(\$68.49)	0.00	0.00	ELECCHIP_SOLIDCHILLER-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Eliminate Exhaust	employee	New	4.91	15	\$1.07	0%	0%	\$26.69	0.00	0.00	ELECCHIP_ELIMEXHAUST-HVAC-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Alternative Exhaust Injector	employee	New	9.81	15	\$5.18	0%	0%	(\$89.91)	0.00	0.00	ELECCHIP_EXHAUSTINJECTOR-Heating-7PLN-v5-1
Misc. Mfg	Process	Elec Chip Fab: Reduce Process Gas Pressure	employee	New	9.81	15	\$0.10	0%	0%	(\$14.88)	0.00	0.00	ELECCHIP_REDGAS-Refrigeration-7PLN-v5-1
Misc. Mfg	Motors	Panel: Hydraulic Press	employee	New	351.00	10	\$82.56	0%	0%	\$35.24	0.00	0.00	PANEL_HYDPPRESS-Process-7PLN-v5-1
Misc. Mfg	Motors	Wood: Replace Pneumatic Conveyor	employee	New	363.53	10	\$6.18	0%	0%	(\$64.68)	0.00	0.00	WOOD_CONVEYOR-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Metal: New Arc Furnace	employee	New	436.95	10	\$47.32	0%	0%	(\$2,205.10)	0.00	0.00	METAL_ARCFURN-Process Heating-7PLN-v5-1
Misc. Mfg	Process	Paper: Premium Control Large Material	employee	New	63.13	10	\$32.58	0%	0%	\$77.33	0.00	0.00	PAPER_PREMCTRL-Material Handling-7PLN-v5-1
Misc. Mfg	Process	Paper: Efficient Pulp Screen	employee	New	50.57	10	\$10.73	0%	0%	\$31.80	0.00	0.00	PAPER_PULPSCRN-Process-7PLN-v5-1
Misc. Mfg	Process	Kraft: Effluent Treatment System	employee	New	50.57	10	\$4.40	0%	0%	\$13.04	0.00	0.00	PAPER_EFFTREAT-Motors-7PLN-v5-1
Misc. Mfg	Motors	Kraft: Efficient Agitator	employee	New	626.78	10	\$61.61	0%	0%	\$14.73	0.00	0.00	PAPER_EFFAG-Process-7PLN-v5-1
Misc. Mfg	Process	Mech Pulp: Premium Process	employee	New	0.57	5	\$0.08	0%	0%	\$31.88	0.00	0.00	MECHPULP_PREMPROC-Process-7PLN-v5-1
Misc. Mfg	Motors	Mech Pulp: Refiner Plate Improvement	employee	New	5.59	1	\$0.24	0%	0%	\$40.79	0.00	0.00	MECHPULP_REF_IMPROV-Process-7PLN-v5-1
Misc. Mfg	Cooling	Transformer - High Efficiency	employee	New	91.37	10	\$44.08	15%	15%	\$17.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Heating	Transformer - High Efficiency	employee	New	185.04	10	\$44.08	15%	15%	\$17.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1

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Misc. Mfg	Ventilation	Transformer - High Efficiency	employee	New	6.71	10	\$44.08	15%	15%	\$17.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Interior Lighting	Transformer - High Efficiency	employee	New	14.70	10	\$44.08	15%	15%	\$17.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Exterior Lighting	Transformer - High Efficiency	employee	New	3.77	10	\$44.08	15%	15%	\$17.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Motors	Transformer - High Efficiency	employee	New	45.31	10	\$44.08	15%	15%	\$17.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Process	Transformer - High Efficiency	employee	New	25.28	10	\$44.08	15%	15%	\$17.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Miscellaneous	Transformer - High Efficiency	employee	New	9.75	10	\$44.08	15%	15%	\$17.19	0.00	0.00	TRANS_HE-Motors-7PLN-v5-1
Misc. Mfg	Cooling	Strategic Energy Management	employee	New	263.96	3	\$88.46	3%	11%	\$28.89	0.06	0.06	IND_SEM-HVAC-AEG-1
Misc. Mfg	Heating	Strategic Energy Management	employee	New	534.56	3	\$88.46	3%	11%	\$28.89	0.04	0.04	IND_SEM-HVAC-AEG-1
Misc. Mfg	Ventilation	Strategic Energy Management	employee	New	19.38	3	\$88.46	3%	11%	\$28.89	0.02	0.02	IND_SEM-HVAC-AEG-1
Misc. Mfg	Interior Lighting	Strategic Energy Management	employee	New	42.46	3	\$88.46	3%	11%	\$28.89	0.05	0.05	IND_SEM-Lighting-AEG-1
Misc. Mfg	Exterior Lighting	Strategic Energy Management	employee	New	10.88	3	\$88.46	3%	11%	\$28.89	0.01	0.01	IND_SEM-Lighting-AEG-1
Misc. Mfg	Motors	Strategic Energy Management	employee	New	130.90	3	\$88.46	3%	11%	\$28.89	0.16	0.16	IND_SEM-Motors-AEG-1
Misc. Mfg	Process	Strategic Energy Management	employee	New	73.04	3	\$88.46	3%	11%	\$28.89	0.09	0.09	IND_SEM-Process-AEG-1
Misc. Mfg	Miscellaneous	Strategic Energy Management	employee	New	28.17	3	\$88.46	3%	11%	\$28.89	0.06	0.04	IND_SEM-Process-AEG-1
Misc. Mfg	Interior Lighting	Commissioning	employee	New	48.99	3	\$147.04	5%	39%	\$157.46	1.79	1.81	IND_SEM-HVAC-AEG-1
Misc. Mfg	Exterior Lighting	Commissioning	employee	New	12.55	3	\$147.04	5%	39%	\$157.46	0.46	0.47	IND_SEM-HVAC-AEG-1
Misc. Mfg	Motors	Commissioning	employee	New	151.04	3	\$147.04	5%	39%	\$157.46	9.48	9.48	IND_SEM-HVAC-AEG-1

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Misc. Mfg	Process	Commissioning	employee	New	84.28	3	\$147.04	5%	39%	\$157.46	5.29	5.29	IND_SEM-Lighting-AEG-1
Misc. Mfg	Miscellaneous	Commissioning	employee	New	32.51	3	\$147.04	5%	39%	\$157.46	1.23	1.02	IND_SEM-Lighting-AEG-1
Misc. Mfg	Interior Lighting	Retrocommissioning	employee	New	48.99	3	\$93.34	0%	0%	\$99.96	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Exterior Lighting	Retrocommissioning	employee	New	12.55	3	\$93.34	0%	0%	\$99.96	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Motors	Retrocommissioning	employee	New	151.04	3	\$93.34	0%	0%	\$99.96	0.00	0.00	IND_RCX-Motors-AEG-1
Misc. Mfg	Process	Retrocommissioning	employee	New	84.28	3	\$93.34	0%	0%	\$99.96	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Miscellaneous	Retrocommissioning	employee	New	32.51	3	\$93.34	0%	0%	\$99.96	0.00	0.00	IND_RCX-Process-AEG-1
Misc. Mfg	Motors	Municipal Sewage Treatment - Optimization	employee	New	18.12	12	\$9.89	0%	0%	\$44.05	0.00	0.00	SEWAGE_OPT-Water and Wastewater-7PLN-v5-1
Misc. Mfg	Motors	Municipal Water Supply Treatment - Optimization	Water MGD	New	51,205.96	12	\$14,678.85	0%	0%	\$39.32	0.00	0.00	WSUPPLY_OPT-Process-7PLN-v6-1
Misc. Mfg	Motors	Municipal Water Treatment - Pulsed Air Mixing	employee	New	301.78	11	\$235.15	0%	0%	\$112.38	0.00	0.00	WWTP_PULSAIRMIX-Motors-AEG-1
Misc. Mfg	Process	Food Processing - Radio Frequency Defrosting	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	Petroleum Pump - Energy Management	employee	New	0.00	3	\$0.00	0%	0%	\$0.00	0.00	0.00	TBD
Misc. Mfg	Motors	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - ORC	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Misc. Mfg	Process	WHP - High Temperature Waste Heat	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Steam Optimization	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Motors	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis
Misc. Mfg	Process	WHP - Conveyor Regen	employee	New	0.00	20	\$0.00	0%	0%	\$0.00	0.00	0.00	WHP Analysis

Irrigation Measures

California Irrigation Measures Assumptions

Table I-16 Summary of Irrigation Measure Assumptions in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - CA	Motors	Pumps (< 100 HP)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - CA	Motors	Pumps (100 HP+)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - CA	Motors	Other Motors	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - CA	Motors	Pumps (< 100 HP)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - CA	Motors	Pumps (100 HP+)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - CA	Motors	Other Motors	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - CA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	70.78	4	\$9.31	4%	5%	\$37.55	33.56	33.65	AGR_NOZFLOW-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	70.78	4	\$3.48	55%	62%	\$14.02	235.98	236.62	AGR_NOZ-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	62.22	5	\$20.26	30%	36%	\$78.89	172.10	172.57	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	372.31	5	\$6.43	73%	75%	\$4.19	367.78	368.78	AGR_GASKET-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Drain Replacement	acres	Existing	385.87	5	\$22.45	73%	75%	\$14.10	381.18	382.21	AGR_DRAINREPLACE-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	185.25	8	\$29.57	73%	75%	\$28.58	183.00	183.50	AGR_PIPE-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Thunderbird - Hub Replacement	acres	Existing	320.62	10	\$164.27	8%	10%	\$80.36	291.38	292.17	AGR_HUB-Irrigation-7PLN-v4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - CA	Motors	Wheel Line - Leveler Maintenance	acres	Existing	92.32	8	\$5.34	15%	18%	\$10.35	116.28	116.60	AGR_LVLR_MAINT-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	122.36	5	\$24.90	6%	32%	\$49.31	1,615.66	1,620.06	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	9.34	15	\$4.06	56%	75%	\$56.69	91.64	91.89	AGR_GOOSELBOW-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	9.34	10	\$6.34	46%	75%	\$106.46	137.46	137.83	AGR_DROPTUBE-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	15.54	8	\$2.13	10%	12%	\$24.54	13.82	13.86	AGR_GASKET_BOOT-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	3.89	8	\$5.11	73%	75%	\$235.55	3.84	3.85	AGR_GASKET_TOWER-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	624.72	10	\$21.33	1%	9%	\$5.36	2,389.30	2,392.08	LESA-Motors-7PLN-v2-1
Irrigation - CA	Motors	Low Pressure Regulators	acres	Existing	481.52	10	\$39.90	53%	60%	\$13.00	1,600.35	1,602.21	AGR_LOWREG-Irrigation-7PLN-v3-15
Irrigation - CA	Motors	Motors - Variable Frequency Drive	service point	Existing	6,501.06	10	\$1,885.69	15%	30%	\$45.50	1,921.52	1,925.83	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - CA	Motors	Scientific Irrigation Practices	acres	Existing	97.17	1	\$10.74	75%	75%	\$103.60	0.00	0.00	Custom - prior study
Irrigation - CA	Motors	Green Motor Rewind	rewind motor	Existing	1,037.80	20	\$341.99	12%	75%	\$38.36	295.48	296.29	AGMTR_GRWND-Motors-7PLN-v3-4
Irrigation - CA	Motors	Pump Equipment Upgrade	acres	Existing	346.62	10	\$1,254.51	8%	38%	\$567.67	197.86	198.39	PUMP_EQPT-Motors-7PLN-v5-1
Irrigation - CA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	70.90	4	\$9.31	4%	5%	\$37.38	0.50	0.50	AGR_NOZFLOW-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Nozzle Replacement	acres	New	70.90	4	\$3.48	55%	62%	\$13.96	3.50	3.50	AGR_NOZ-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	New	62.33	5	\$20.26	30%	36%	\$78.55	3.10	3.10	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - CA	Motors	Wheel/Hand - Gasket Replacement	acres	New	372.94	5	\$6.43	75%	75%	\$4.17	0.00	0.00	AGR_GASKET-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Drain Replacement	acres	New	386.53	5	\$22.45	75%	75%	\$14.04	0.00	0.00	AGR_DRAINREPLACE-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel/Hand - Pipe Maintenance	acres	New	185.57	8	\$29.57	75%	75%	\$28.45	0.00	0.00	AGR_PIPE-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Thunderbird - Hub Replacement	acres	New	321.16	10	\$164.27	8%	10%	\$80.01	8.85	8.85	AGR_HUB-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Wheel Line - Leveler Maintenance	acres	New	92.48	8	\$5.34	15%	18%	\$10.31	3.03	3.03	AGR_LVLRL_MAINT-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - New Sprinkler Package	acres	New	122.57	5	\$24.90	6%	32%	\$49.09	29.34	29.34	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - New Goosenecks	acres	New	9.36	15	\$4.06	56%	75%	\$56.44	3.49	3.49	AGR_GOOSELBOW-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - New Drop Tubes	acres	New	9.36	10	\$6.34	56%	75%	\$106.00	2.80	2.80	AGR_DROPTUBE-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	New	15.57	8	\$2.13	10%	12%	\$24.43	0.36	0.36	AGR_GASKET_BOOT-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	New	3.89	8	\$5.11	75%	75%	\$234.53	0.00	0.00	AGR_GASKET_TOWER-Irrigation-7PLN-v4-2
Irrigation - CA	Motors	Center Pivot - Low Energy Spray Application	acres	New	625.78	10	\$21.33	1%	9%	\$5.33	145.71	145.71	LESA-Motors-7PLN-v2-1
Irrigation - CA	Motors	Low Pressure Regulators	acres	New	482.33	10	\$39.90	53%	60%	\$12.94	97.60	97.60	AGR_LOWREG-Irrigation-7PLN-v3-15
Irrigation - CA	Motors	Motors - Variable Frequency Drive	service point	New	6,467.65	10	\$1,872.84	15%	30%	\$45.30	79.72	79.72	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - CA	Motors	Scientific Irrigation Practices	acres	New	97.34	1	\$10.74	75%	75%	\$103.15	0.00	0.00	Custom - prior study
Irrigation - CA	Motors	Green Motor Rewind	rewind motor	New	1,039.54	20	\$341.99	11%	75%	\$38.19	11.49	11.49	AGMTR_GRWND-Motors-7PLN-v3-4

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - CA	Motors	Pump Equipment Upgrade	acres	New	347.21	10	\$1,245.98	8%	38%	\$561.36	6.05	6.05	PUMP_EQPT-Motors-7PLN-v5-1

Idaho Irrigation Measures Assumptions

Table I-17 Summary of Irrigation Measure Assumptions in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - ID	Motors	Pumps (< 100 HP)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - ID	Motors	Pumps (100 HP+)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - ID	Motors	Other Motors	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - ID	Motors	Pumps (< 100 HP)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - ID	Motors	Pumps (100 HP+)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - ID	Motors	Other Motors	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - ID	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	63.74	4	\$9.31	4%	5%	\$39.41	268.70	269.69	AGR_NOZFLOW-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	63.74	4	\$3.48	55%	62%	\$14.72	1,889.28	1,896.29	AGR_NOZ-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	45.28	5	\$20.26	30%	36%	\$99.72	1,113.45	1,117.58	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	270.94	5	\$6.43	73%	75%	\$5.29	2,379.41	2,388.24	AGR_GASKET-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Drain Replacement	acres	Existing	280.81	5	\$22.45	73%	75%	\$17.82	2,466.09	2,475.24	AGR_DRAINREPLACE-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	134.81	8	\$29.57	73%	75%	\$33.53	1,183.93	1,188.32	AGR_PIPE-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Thunderbird - Hub Replacement	acres	Existing	233.32	10	\$164.27	8%	10%	\$91.44	1,885.14	1,892.14	AGR_HUB-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel Line - Leveler Maintenance	acres	Existing	67.19	8	\$5.34	15%	18%	\$12.15	752.29	755.08	AGR_LVLRL_MAINT-Irrigation-7PLN-v4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - ID	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	94.27	5	\$24.90	6%	32%	\$58.87	11,043.38	11,084.35	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	7.20	15	\$4.06	56%	75%	\$56.48	626.38	628.70	AGR_GOOSELBOW-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	7.20	10	\$6.34	46%	75%	\$114.43	939.56	943.05	AGR_DROPTUBE-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	11.98	8	\$2.13	10%	12%	\$27.20	94.65	95.00	AGR_GASKET_BOOT-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	2.99	8	\$5.11	73%	75%	\$261.08	26.29	26.39	AGR_GASKET_TOWER-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	482.36	10	\$21.33	1%	9%	\$5.74	16,797.40	16,823.94	LESA-Motors-7PLN-v2-1
Irrigation - ID	Motors	Low Pressure Regulators	acres	Existing	311.41	10	\$75.33	53%	60%	\$31.42	9,423.59	9,438.48	AGR_LOWREG-Irrigation-7PLN-v3-3
Irrigation - ID	Motors	Motors - Variable Frequency Drive	service point	Existing	19,438.17	10	\$5,639.00	15%	30%	\$37.68	13,276.51	13,317.07	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - ID	Motors	Scientific Irrigation Practices	acres	Existing	75.03	1	\$10.74	75%	75%	\$140.20	0.00	0.00	Custom - prior study
Irrigation - ID	Motors	Green Motor Rewind	rewind motor	Existing	1,373.23	20	\$458.56	12%	75%	\$28.67	2,014.10	2,021.56	AGMTR_GRWND-Motors-7PLN-v3-1
Irrigation - ID	Motors	Pump Equipment Upgrade	acres	Existing	274.94	10	\$3,853.90	8%	38%	\$1,820.63	350.81	352.11	PUMP_EQPT-Motors-7PLN-v5-1
Irrigation - ID	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	63.86	4	\$9.31	4%	5%	\$39.20	4.02	4.02	AGR_NOZFLOW-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Nozzle Replacement	acres	New	63.86	4	\$3.48	55%	62%	\$14.64	28.25	28.25	AGR_NOZ-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	New	45.36	5	\$20.26	30%	36%	\$99.18	20.22	20.22	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Gasket Replacement	acres	New	271.43	5	\$6.43	75%	75%	\$5.26	0.00	0.00	AGR_GASKET-Irrigation-7PLN-v4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - ID	Motors	Wheel/Hand - Drain Replacement	acres	New	281.32	5	\$22.45	75%	75%	\$17.72	0.00	0.00	AGR_DRAINREPLACE-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel/Hand - Pipe Maintenance	acres	New	135.06	8	\$29.57	75%	75%	\$33.35	0.00	0.00	AGR_PIPE-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Thunderbird - Hub Replacement	acres	New	233.75	10	\$164.27	8%	10%	\$90.94	57.79	57.79	AGR_HUB-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Wheel Line - Leveler Maintenance	acres	New	67.31	8	\$5.34	15%	18%	\$12.08	19.76	19.76	AGR_LVLR_MAINT-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - New Sprinkler Package	acres	New	94.44	5	\$24.90	6%	32%	\$58.55	202.37	202.37	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - New Goosenecks	acres	New	7.21	15	\$4.06	56%	75%	\$56.17	24.15	24.15	AGR_GOOSELBOW-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - New Drop Tubes	acres	New	7.21	10	\$6.34	56%	75%	\$113.80	19.37	19.37	AGR_DROPTUBE-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	New	12.00	8	\$2.13	10%	12%	\$27.05	2.49	2.49	AGR_GASKET_BOOT-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	New	3.00	8	\$5.11	75%	75%	\$259.66	0.00	0.00	AGR_GASKET_TOWER-Irrigation-7PLN-v4-1
Irrigation - ID	Motors	Center Pivot - Low Energy Spray Application	acres	New	483.24	10	\$21.33	1%	9%	\$5.71	1,010.80	1,010.80	LESA-Motors-7PLN-v2-1
Irrigation - ID	Motors	Low Pressure Regulators	acres	New	311.98	10	\$75.33	53%	60%	\$31.25	567.08	567.08	AGR_LOWREG-Irrigation-7PLN-v3-3
Irrigation - ID	Motors	Motors - Variable Frequency Drive	service point	New	19,301.57	10	\$5,589.16	15%	30%	\$37.47	551.10	551.10	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - ID	Motors	Scientific Irrigation Practices	acres	New	75.16	1	\$10.74	75%	75%	\$139.43	0.00	0.00	Custom - prior study
Irrigation - ID	Motors	Green Motor Rewind	rewind motor	New	1,375.74	20	\$458.56	11%	75%	\$28.52	79.14	79.14	AGMTR_GRWND-Motors-7PLN-v3-1
Irrigation - ID	Motors	Pump Equipment Upgrade	acres	New	275.44	10	\$3,819.89	8%	38%	\$1,794.71	10.85	10.85	PUMP_EQPT-Motors-7PLN-v5-1

Utah Irrigation Measures Assumptions

Table I-18 Summary of Irrigation Measure Assumptions in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - UT	Motors	Pumps (< 100 HP)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - UT	Motors	Pumps (100 HP+)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - UT	Motors	Other Motors	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - UT	Motors	Pumps (< 100 HP)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - UT	Motors	Pumps (100 HP+)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - UT	Motors	Other Motors	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - UT	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	63.75	4	\$9.31	4%	5%	\$32.99	89.01	89.32	AGR_NOZFLOW-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	63.75	4	\$3.48	55%	62%	\$12.32	625.85	628.01	AGR_NOZ-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	45.29	5	\$20.26	30%	36%	\$83.47	368.85	370.12	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	270.97	5	\$6.43	73%	75%	\$4.43	788.21	790.93	AGR_GASKET-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Drain Replacement	acres	Existing	280.85	5	\$22.45	73%	75%	\$14.91	816.93	819.74	AGR_DRAINREPLACE-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	134.83	8	\$29.57	73%	75%	\$28.06	392.19	393.54	AGR_PIPE-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Thunderbird - Hub Replacement	acres	Existing	233.35	10	\$164.27	8%	10%	\$76.54	624.48	626.63	AGR_HUB-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel Line - Leveler Maintenance	acres	Existing	67.19	8	\$5.34	15%	18%	\$10.17	249.21	250.07	AGR_LVLRL_MAINT-Irrigation-7PLN-v4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - UT	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	94.28	5	\$24.90	6%	32%	\$49.28	3,660.72	3,673.33	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	7.20	15	\$4.06	56%	75%	\$47.27	207.63	208.35	AGR_GOOSELBOW-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	7.20	10	\$6.34	46%	75%	\$95.77	311.45	312.52	AGR_DROPTUBE-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	11.98	8	\$2.13	10%	12%	\$22.76	31.35	31.46	AGR_GASKET_BOOT-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	2.99	8	\$5.11	73%	75%	\$218.52	8.71	8.74	AGR_GASKET_TOWER-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	482.43	10	\$21.33	1%	9%	\$4.81	5,467.97	5,476.01	LESA-Motors-7PLN-v2-1
Irrigation - UT	Motors	Low Pressure Regulators	acres	Existing	311.45	10	\$75.33	53%	60%	\$26.30	3,067.61	3,072.12	AGR_LOWREG-Irrigation-7PLN-v3-3
Irrigation - UT	Motors	Motors - Variable Frequency Drive	service point	Existing	10,219.64	10	\$2,964.30	15%	30%	\$31.54	4,380.34	4,392.76	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - UT	Motors	Scientific Irrigation Practices	acres	Existing	75.04	1	\$10.74	75%	75%	\$117.34	0.00	0.00	Custom - prior study
Irrigation - UT	Motors	Green Motor Rewind	rewind motor	Existing	1,373.43	20	\$458.56	12%	75%	\$24.00	660.14	662.40	AGMTR_GRWND-Motors-7PLN-v3-1
Irrigation - UT	Motors	Pump Equipment Upgrade	acres	Existing	289.88	10	\$2,135.68	8%	38%	\$801.02	218.73	219.48	PUMP_EQPT-Motors-7PLN-v5-1
Irrigation - UT	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	63.86	4	\$9.31	4%	5%	\$32.82	1.35	1.35	AGR_NOZFLOW-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Nozzle Replacement	acres	New	63.86	4	\$3.48	55%	62%	\$12.26	9.47	9.47	AGR_NOZ-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	New	45.36	5	\$20.26	30%	36%	\$83.04	6.78	6.78	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Gasket Replacement	acres	New	271.43	5	\$6.43	75%	75%	\$4.41	0.00	0.00	AGR_GASKET-Irrigation-7PLN-v4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - UT	Motors	Wheel/Hand - Drain Replacement	acres	New	281.32	5	\$22.45	75%	75%	\$14.84	0.00	0.00	AGR_DRAINREPLACE-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel/Hand - Pipe Maintenance	acres	New	135.06	8	\$29.57	75%	75%	\$27.92	0.00	0.00	AGR_PIPE-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Thunderbird - Hub Replacement	acres	New	233.75	10	\$164.27	8%	10%	\$76.15	19.35	19.35	AGR_HUB-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Wheel Line - Leveler Maintenance	acres	New	67.31	8	\$5.34	15%	18%	\$10.12	6.62	6.62	AGR_LVLRL_MAINT-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - New Sprinkler Package	acres	New	94.44	5	\$24.90	6%	32%	\$49.03	67.81	67.81	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - New Goosenecks	acres	New	7.21	15	\$4.06	56%	75%	\$47.03	8.08	8.08	AGR_GOOSELBOW-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - New Drop Tubes	acres	New	7.21	10	\$6.34	56%	75%	\$95.29	6.49	6.49	AGR_DROPTUBE-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	New	12.00	8	\$2.13	10%	12%	\$22.65	0.83	0.83	AGR_GASKET_BOOT-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	New	3.00	8	\$5.11	75%	75%	\$217.42	0.00	0.00	AGR_GASKET_TOWER-Irrigation-7PLN-v4-1
Irrigation - UT	Motors	Center Pivot - Low Energy Spray Application	acres	New	483.24	10	\$21.33	1%	9%	\$4.78	335.36	335.36	LESA-Motors-7PLN-v2-1
Irrigation - UT	Motors	Low Pressure Regulators	acres	New	311.98	10	\$75.33	53%	60%	\$26.16	188.14	188.14	AGR_LOWREG-Irrigation-7PLN-v3-3
Irrigation - UT	Motors	Motors - Variable Frequency Drive	service point	New	10,153.21	10	\$2,940.07	15%	30%	\$31.38	184.02	184.02	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - UT	Motors	Scientific Irrigation Practices	acres	New	75.16	1	\$10.74	75%	75%	\$116.75	0.00	0.00	Custom - prior study
Irrigation - UT	Motors	Green Motor Rewind	rewind motor	New	1,375.74	20	\$458.56	11%	75%	\$23.88	26.19	26.19	AGMTR_GRWND-Motors-7PLN-v3-1
Irrigation - UT	Motors	Pump Equipment Upgrade	acres	New	290.38	10	\$2,118.34	8%	38%	\$790.49	6.83	6.83	PUMP_EQPT-Motors-7PLN-v5-1

Washington Irrigation Measures Assumptions

Table I-19 Summary of Irrigation Measure Assumptions in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WA	Motors	Pumps (< 100 HP)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - WA	Motors	Pumps (100 HP+)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - WA	Motors	Other Motors	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - WA	Motors	Pumps (< 100 HP)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - WA	Motors	Pumps (100 HP+)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - WA	Motors	Other Motors	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - WA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	70.84	4	\$9.31	4%	5%	\$36.99	55.58	55.67	AGR_NOZFLOW-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	70.84	4	\$3.48	55%	62%	\$13.82	390.78	391.44	AGR_NOZ-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	62.28	5	\$20.26	30%	36%	\$77.31	285.01	285.49	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	372.63	5	\$6.43	73%	75%	\$4.10	609.05	610.08	AGR_GASKET-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Drain Replacement	acres	Existing	386.21	5	\$22.45	73%	75%	\$13.81	631.24	632.31	AGR_DRAINREPLACE-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	185.41	8	\$29.57	73%	75%	\$27.66	303.05	303.56	AGR_PIPE-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Thunderbird - Hub Replacement	acres	Existing	320.90	10	\$164.27	8%	10%	\$77.25	482.54	483.35	AGR_HUB-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel Line - Leveler Maintenance	acres	Existing	92.40	8	\$5.34	15%	18%	\$10.02	192.56	192.89	AGR_LVLRL_MAINT-Irrigation-7PLN-v4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WA	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	122.47	5	\$24.90	6%	32%	\$48.32	2,683.10	2,687.63	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	9.35	15	\$4.06	56%	75%	\$53.88	152.18	152.44	AGR_GOOSELBOW-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	9.35	10	\$6.34	46%	75%	\$102.33	228.28	228.66	AGR_DROPTUBE-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	15.56	8	\$2.13	10%	12%	\$23.75	22.89	22.92	AGR_GASKET_BOOT-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	3.89	8	\$5.11	73%	75%	\$227.97	6.36	6.37	AGR_GASKET_TOWER-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	625.26	10	\$21.33	1%	9%	\$5.15	3,997.05	3,999.93	LESA-Motors-7PLN-v2-1
Irrigation - WA	Motors	Low Pressure Regulators	acres	Existing	481.93	10	\$39.90	53%	60%	\$22.32	2,677.22	2,679.14	AGR_LOWREG-Irrigation-7PLN-v3-15
Irrigation - WA	Motors	Motors - Variable Frequency Drive	service point	Existing	4,464.63	10	\$1,293.90	15%	30%	\$43.73	3,190.48	3,194.92	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - WA	Motors	Scientific Irrigation Practices	acres	Existing	97.25	1	\$10.74	75%	75%	\$46.30	0.00	0.00	Custom - prior study
Irrigation - WA	Motors	Green Motor Rewind	rewind motor	Existing	1,038.68	20	\$341.99	12%	75%	\$36.17	490.11	490.93	AGMTR_GRWND-Motors-7PLN-v3-4
Irrigation - WA	Motors	Pump Equipment Upgrade	acres	Existing	342.81	10	\$850.61	8%	38%	\$374.42	478.28	479.08	PUMP_EQPT-Motors-7PLN-v5-1
Irrigation - WA	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	70.90	4	\$9.31	4%	5%	\$36.89	0.83	0.83	AGR_NOZFLOW-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Nozzle Replacement	acres	New	70.90	4	\$3.48	55%	62%	\$13.78	5.85	5.85	AGR_NOZ-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	New	62.33	5	\$20.26	30%	36%	\$77.11	5.18	5.18	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Gasket Replacement	acres	New	372.94	5	\$6.43	75%	75%	\$4.09	0.00	0.00	AGR_GASKET-Irrigation-7PLN-v4-2

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WA	Motors	Wheel/Hand - Drain Replacement	acres	New	386.53	5	\$22.45	75%	75%	\$13.78	0.00	0.00	AGR_DRAINREPLACE-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel/Hand - Pipe Maintenance	acres	New	185.57	8	\$29.57	75%	75%	\$27.59	0.00	0.00	AGR_PIPE-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Thunderbird - Hub Replacement	acres	New	321.16	10	\$164.27	8%	10%	\$77.05	14.79	14.79	AGR_HUB-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Wheel Line - Leveler Maintenance	acres	New	92.48	8	\$5.34	15%	18%	\$9.99	5.06	5.06	AGR_LVLRL_MAINT-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - New Sprinkler Package	acres	New	122.57	5	\$24.90	6%	32%	\$48.19	48.97	48.97	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - New Goosenecks	acres	New	9.36	15	\$4.06	56%	75%	\$53.75	5.83	5.83	AGR_GOOSELBOW-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - New Drop Tubes	acres	New	9.36	10	\$6.34	56%	75%	\$102.08	4.68	4.68	AGR_DROPTUBE-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	New	15.57	8	\$2.13	10%	12%	\$23.69	0.60	0.60	AGR_GASKET_BOOT-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	New	3.89	8	\$5.11	75%	75%	\$227.40	0.00	0.00	AGR_GASKET_TOWER-Irrigation-7PLN-v4-2
Irrigation - WA	Motors	Center Pivot - Low Energy Spray Application	acres	New	625.78	10	\$21.33	1%	9%	\$5.14	243.03	243.03	LESA-Motors-7PLN-v2-1
Irrigation - WA	Motors	Low Pressure Regulators	acres	New	482.33	10	\$39.90	53%	60%	\$22.27	162.78	162.78	AGR_LOWREG-Irrigation-7PLN-v3-15
Irrigation - WA	Motors	Motors - Variable Frequency Drive	service point	New	4,450.34	10	\$1,288.69	15%	30%	\$43.62	132.92	132.92	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - WA	Motors	Scientific Irrigation Practices	acres	New	97.34	1	\$10.74	75%	75%	\$46.19	0.00	0.00	Custom - prior study
Irrigation - WA	Motors	Green Motor Rewind	rewind motor	New	1,039.54	20	\$341.99	11%	75%	\$36.08	19.24	19.24	AGMTR_GRWND-Motors-7PLN-v3-4
Irrigation - WA	Motors	Pump Equipment Upgrade	acres	New	343.10	10	\$847.20	8%	38%	\$371.99	14.72	14.72	PUMP_EQPT-Motors-7PLN-v5-1

Wyoming Irrigation Measures Assumptions

Table I-20 Summary of Irrigation Measure Assumptions in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WY	Motors	Pumps (< 100 HP)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - WY	Motors	Pumps (100 HP+)	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - WY	Motors	Other Motors	1 motor	Existing	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - WY	Motors	Pumps (< 100 HP)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-44
Irrigation - WY	Motors	Pumps (100 HP+)	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-54
Irrigation - WY	Motors	Other Motors	1 motor	New	0.00	15	\$0.00	100%	100%	\$0.00	0.00	0.00	MTR_TEFC-Motors-DEER-v2008-42
Irrigation - WY	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	Existing	63.76	4	\$9.31	4%	5%	\$40.36	9.81	9.84	AGR_NOZFLOW-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Nozzle Replacement	acres	Existing	63.76	4	\$3.48	55%	62%	\$15.07	69.00	69.21	AGR_NOZ-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	Existing	45.30	5	\$20.26	30%	36%	\$103.94	40.67	40.79	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Gasket Replacement	acres	Existing	271.03	5	\$6.43	73%	75%	\$5.52	86.90	87.17	AGR_GASKET-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Drain Replacement	acres	Existing	280.90	5	\$22.45	73%	75%	\$18.57	90.07	90.35	AGR_DRAINREPLACE-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Pipe Maintenance	acres	Existing	134.86	8	\$29.57	73%	75%	\$36.80	43.24	43.37	AGR_PIPE-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Thunderbird - Hub Replacement	acres	Existing	233.40	10	\$164.27	8%	10%	\$102.21	68.85	69.06	AGR_HUB-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel Line - Leveler Maintenance	acres	Existing	67.21	8	\$5.34	15%	18%	\$13.33	27.48	27.56	AGR_LVLRL_MAINT-Irrigation-7PLN-v4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WY	Motors	Center Pivot/Linear - New Sprinkler Package	acres	Existing	94.30	5	\$24.90	6%	32%	\$61.36	404.00	405.23	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - New Goosenecks	acres	Existing	7.20	15	\$4.06	56%	75%	\$66.70	22.91	22.98	AGR_GOOSELBOW-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - New Drop Tubes	acres	Existing	7.20	10	\$6.34	46%	75%	\$127.91	34.37	34.48	AGR_DROPTUBE-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	Existing	11.98	8	\$2.13	10%	12%	\$29.85	3.46	3.47	AGR_GASKET_BOOT-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	Existing	2.99	8	\$5.11	73%	75%	\$286.58	0.96	0.96	AGR_GASKET_TOWER-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot - Low Energy Spray Application	acres	Existing	482.52	10	\$21.33	1%	9%	\$6.42	599.80	600.58	LESA-Motors-7PLN-v2-1
Irrigation - WY	Motors	Low Pressure Regulators	acres	Existing	311.51	10	\$75.33	53%	60%	\$35.12	336.50	336.93	AGR_LOWREG-Irrigation-7PLN-v3-3
Irrigation - WY	Motors	Motors - Variable Frequency Drive	service point	Existing	4,808.03	10	\$1,394.34	15%	30%	\$42.12	482.38	483.60	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - WY	Motors	Scientific Irrigation Practices	acres	Existing	75.05	1	\$10.74	75%	75%	\$134.71	0.00	0.00	Custom - prior study
Irrigation - WY	Motors	Green Motor Rewind	rewind motor	Existing	1,373.71	20	\$458.56	12%	75%	\$34.71	72.30	72.52	AGMTR_GRWND-Motors-7PLN-v3-1
Irrigation - WY	Motors	Pump Equipment Upgrade	acres	Existing	287.80	10	\$997.18	8%	38%	\$503.18	50.93	51.08	PUMP_EQPT-Motors-7PLN-v5-1
Irrigation - WY	Motors	Wheel/Hand - Flow Control Nozzle Replacement	acres	New	63.86	4	\$9.31	4%	5%	\$40.18	0.15	0.15	AGR_NOZFLOW-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Nozzle Replacement	acres	New	63.86	4	\$3.48	55%	62%	\$15.01	1.05	1.05	AGR_NOZ-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Impact Sprinkler Maintenance	acres	New	45.36	5	\$20.26	30%	36%	\$103.48	0.75	0.75	AGR_SPRINKLER_MAINT-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Gasket Replacement	acres	New	271.43	5	\$6.43	75%	75%	\$5.49	0.00	0.00	AGR_GASKET-Irrigation-7PLN-v4-1

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Irrigation - WY	Motors	Wheel/Hand - Drain Replacement	acres	New	281.32	5	\$22.45	75%	75%	\$18.49	0.00	0.00	AGR_DRAINREPLACE-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel/Hand - Pipe Maintenance	acres	New	135.06	8	\$29.57	75%	75%	\$36.64	0.00	0.00	AGR_PIPE-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Thunderbird - Hub Replacement	acres	New	233.75	10	\$164.27	8%	10%	\$101.76	2.15	2.15	AGR_HUB-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Wheel Line - Leveler Maintenance	acres	New	67.31	8	\$5.34	15%	18%	\$13.27	0.74	0.74	AGR_LVLRL_MAINT-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - New Sprinkler Package	acres	New	94.44	5	\$24.90	6%	32%	\$61.09	7.54	7.54	AGR_SPRINKLER_PKG-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - New Goosenecks	acres	New	7.21	15	\$4.06	56%	75%	\$66.40	0.90	0.90	AGR_GOOSELBOW-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - New Drop Tubes	acres	New	7.21	10	\$6.34	56%	75%	\$127.34	0.72	0.72	AGR_DROPTUBE-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - Boot Gasket Replacement	acres	New	12.00	8	\$2.13	10%	12%	\$29.72	0.09	0.09	AGR_GASKET_BOOT-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot/Linear - Tower Gasket Replacement	acres	New	3.00	8	\$5.11	75%	75%	\$285.30	0.00	0.00	AGR_GASKET_TOWER-Irrigation-7PLN-v4-1
Irrigation - WY	Motors	Center Pivot - Low Energy Spray Application	acres	New	483.24	10	\$21.33	1%	9%	\$6.39	37.11	37.11	LESA-Motors-7PLN-v2-1
Irrigation - WY	Motors	Low Pressure Regulators	acres	New	311.98	10	\$75.33	53%	60%	\$34.96	20.82	20.82	AGR_LOWREG-Irrigation-7PLN-v3-3
Irrigation - WY	Motors	Motors - Variable Frequency Drive	service point	New	4,780.38	10	\$1,384.25	15%	30%	\$41.93	20.43	20.43	PUMP_VSD-Motors-UN-v1.0-3
Irrigation - WY	Motors	Scientific Irrigation Practices	acres	New	75.16	1	\$10.74	75%	75%	\$134.10	0.00	0.00	Custom - prior study
Irrigation - WY	Motors	Green Motor Rewind	rewind motor	New	1,375.74	20	\$458.56	11%	75%	\$34.56	2.89	2.89	AGMTR_GRWND-Motors-7PLN-v3-1
Irrigation - WY	Motors	Pump Equipment Upgrade	acres	New	288.25	10	\$990.07	8%	38%	\$497.34	1.60	1.60	PUMP_EQPT-Motors-7PLN-v5-1

Street Lighting Measures

California Street Lighting Measures Assumptions

Table I-21 Summary of Street Lighting Measure Assumptions in California

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - CA	Company - 100W	100W Fixture	1 fixture	Existing	249.50	12	\$19.07	100%	100%	(\$47.63)	134.56	134.56	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - CA	Company - 150W	150W Fixture	1 fixture	Existing	358.21	12	\$30.72	100%	100%	(\$29.28)	46.39	46.39	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - CA	Company - 250W	250W Fixture	1 fixture	Existing	645.89	12	\$42.37	100%	100%	(\$14.07)	3.61	3.61	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - CA	Company - 400W	400W Fixture	1 fixture	Existing	1,136.70	12	\$222.43	100%	100%	\$10.91	1.51	1.51	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - CA	Customer - 100W	100W Fixture	1 fixture	Existing	592.05	12	\$19.07	100%	100%	(\$20.07)	74.85	74.85	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - CA	Customer - 150W	150W Fixture	1 fixture	Existing	453.69	12	\$30.72	100%	100%	(\$23.12)	13.81	13.81	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - CA	Customer - 250W	250W Fixture	1 fixture	Existing	645.43	12	\$42.37	100%	100%	(\$14.08)	83.89	83.89	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - CA	Customer - 400W	400W Fixture	1 fixture	Existing	722.90	12	\$222.43	100%	100%	\$17.15	17.64	17.64	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - CA	Customer - 1000W	1000W Fixture	1 fixture	Existing	0.00	12	\$804.99	100%	100%	\$0.00	0.00	0.00	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - CA	Other	Other	1 fixture	Existing	322.47	12	\$30.72	100%	100%	(\$32.52)	141.27	141.27	STREETLGT_LED-Exterior Lighting-7PLN-v9-9

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - CA	Company - 100W	100W Fixture	1 fixture	New	249.50	12	\$19.07	100%	100%	(\$47.63)	16.89	16.89	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - CA	Company - 150W	150W Fixture	1 fixture	New	358.21	12	\$30.72	100%	100%	(\$29.28)	5.82	5.82	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - CA	Company - 250W	250W Fixture	1 fixture	New	645.89	12	\$42.37	100%	100%	(\$14.07)	0.45	0.45	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - CA	Company - 400W	400W Fixture	1 fixture	New	1,136.70	12	\$222.43	100%	100%	\$10.91	0.19	0.19	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - CA	Customer - 100W	100W Fixture	1 fixture	New	592.05	12	\$19.07	100%	100%	(\$20.07)	9.40	9.40	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - CA	Customer - 150W	150W Fixture	1 fixture	New	453.69	12	\$30.72	100%	100%	(\$23.12)	1.73	1.73	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - CA	Customer - 250W	250W Fixture	1 fixture	New	645.43	12	\$42.37	100%	100%	(\$14.08)	10.53	10.53	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - CA	Customer - 400W	400W Fixture	1 fixture	New	722.90	12	\$222.43	100%	100%	\$17.15	2.21	2.21	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - CA	Customer - 1000W	1000W Fixture	1 fixture	New	0.00	12	\$804.99	100%	100%	\$0.00	0.00	0.00	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - CA	Other	Other	1 fixture	New	322.47	12	\$30.72	100%	100%	(\$32.52)	17.73	17.73	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - CA	Company - 100W	Smart Dimming Controller	street lights	Existing	111.86	15	\$150.00	0%	40%	\$6.89	31.54	31.63	AEG-Research
Street Lighting - CA	Company - 150W	Smart Dimming Controller	street lights	Existing	201.06	15	\$150.00	0%	40%	\$6.89	13.65	13.65	AEG-Research
Street Lighting - CA	Company - 250W	Smart Dimming Controller	street lights	Existing	302.11	15	\$150.00	0%	40%	\$6.89	0.89	0.89	AEG-Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - CA	Company - 400W	Smart Dimming Controller	street lights	Existing	475.04	15	\$150.00	0%	40%	\$6.89	0.33	0.33	AEG-Research
Street Lighting - CA	Customer - 100W	Smart Dimming Controller	street lights	Existing	182.31	15	\$150.00	0%	40%	\$6.89	38.86	38.86	AEG-Research
Street Lighting - CA	Customer - 150W	Smart Dimming Controller	street lights	Existing	151.18	15	\$150.00	0%	40%	\$6.89	27.51	27.51	AEG-Research
Street Lighting - CA	Customer - 250W	Smart Dimming Controller	street lights	Existing	294.95	15	\$150.00	0%	40%	\$6.89	21.01	21.01	AEG-Research
Street Lighting - CA	Customer - 400W	Smart Dimming Controller	street lights	Existing	302.11	15	\$150.00	0%	40%	\$6.89	3.87	3.87	AEG-Research
Street Lighting - CA	Customer - 1000W	Smart Dimming Controller	street lights	Existing	0.00	15	\$150.00	0%	40%	\$6.89	0.00	0.00	AEG-Research
Street Lighting - CA	Other	Smart Dimming Controller	street lights	Existing	181.00	15	\$150.00	0%	40%	\$6.89	41.59	41.59	AEG-Research
Street Lighting - CA	Company - 100W	Smart Dimming Controller	street lights	New	119.80	15	\$150.00	0%	40%	\$6.89	1.94	1.94	AEG-Research
Street Lighting - CA	Company - 150W	Smart Dimming Controller	street lights	New	201.06	15	\$150.00	0%	40%	\$6.89	0.78	0.78	AEG-Research
Street Lighting - CA	Company - 250W	Smart Dimming Controller	street lights	New	302.11	15	\$150.00	0%	40%	\$6.89	0.05	0.05	AEG-Research
Street Lighting - CA	Company - 400W	Smart Dimming Controller	street lights	New	475.04	15	\$150.00	0%	40%	\$6.89	0.02	0.02	AEG-Research
Street Lighting - CA	Customer - 100W	Smart Dimming Controller	street lights	New	182.31	15	\$150.00	0%	40%	\$6.89	2.22	2.22	AEG-Research
Street Lighting - CA	Customer - 150W	Smart Dimming Controller	street lights	New	151.18	15	\$150.00	0%	40%	\$6.89	1.57	1.57	AEG-Research
Street Lighting - CA	Customer - 250W	Smart Dimming Controller	street lights	New	294.95	15	\$150.00	0%	40%	\$6.89	1.20	1.20	AEG-Research
Street Lighting - CA	Customer - 400W	Smart Dimming Controller	street lights	New	302.11	15	\$150.00	0%	40%	\$6.89	0.22	0.22	AEG-Research
Street Lighting - CA	Customer - 1000W	Smart Dimming Controller	street lights	New	0.00	15	\$150.00	0%	40%	\$6.89	0.00	0.00	AEG-Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - CA	Other	Smart Dimming Controller	street lights	New	181.00	15	\$150.00	0%	40%	\$6.89	2.38	2.38	AEG-Research

Idaho Street Lighting Measures Assumptions

Table I-22 Summary of Street Lighting Measure Assumptions in Idaho

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - ID	Company - 100W	100W Fixture	1 fixture	Existing	249.91	12	\$19.07	100%	100%	\$8.72	56.48	56.48	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - ID	Company - 150W	150W Fixture	1 fixture	Existing	358.21	12	\$30.72	100%	100%	\$9.81	2.87	2.87	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - ID	Company - 250W	250W Fixture	1 fixture	Existing	645.89	12	\$42.37	100%	100%	\$7.50	12.06	12.06	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - ID	Company - 400W	400W Fixture	1 fixture	Existing	1,136.70	12	\$222.43	100%	100%	\$22.37	7.58	7.58	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - ID	Customer - 100W	100W Fixture	1 fixture	Existing	249.50	12	\$19.07	100%	100%	\$8.74	462.81	462.81	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - ID	Customer - 150W	150W Fixture	1 fixture	Existing	383.92	12	\$30.72	100%	100%	\$9.15	51.40	51.40	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - ID	Customer - 250W	250W Fixture	1 fixture	Existing	645.89	12	\$42.37	100%	100%	\$7.50	165.87	165.87	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - ID	Customer - 400W	400W Fixture	1 fixture	Existing	1,085.88	12	\$222.43	100%	100%	\$23.42	146.16	146.16	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - ID	Customer - 1000W	1000W Fixture	1 fixture	Existing	0.00	12	\$804.99	100%	100%	\$0.00	0.00	0.00	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - ID	Other	Other	1 fixture	Existing	357.11	12	\$30.72	100%	100%	\$9.84	86.52	86.52	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - ID	Company - 100W	100W Fixture	1 fixture	New	249.91	12	\$19.07	100%	100%	\$8.72	7.13	7.13	STREETLGT_LED-Exterior Lighting-7PLN-v9-8

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - ID	Company - 150W	150W Fixture	1 fixture	New	358.21	12	\$30.72	100%	100%	\$9.81	0.36	0.36	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - ID	Company - 250W	250W Fixture	1 fixture	New	645.89	12	\$42.37	100%	100%	\$7.50	1.52	1.52	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - ID	Company - 400W	400W Fixture	1 fixture	New	1,136.70	12	\$222.43	100%	100%	\$22.37	0.96	0.96	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - ID	Customer - 100W	100W Fixture	1 fixture	New	249.50	12	\$19.07	100%	100%	\$8.74	58.45	58.45	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - ID	Customer - 150W	150W Fixture	1 fixture	New	383.92	12	\$30.72	100%	100%	\$9.15	6.49	6.49	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - ID	Customer - 250W	250W Fixture	1 fixture	New	645.89	12	\$42.37	100%	100%	\$7.50	20.95	20.95	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - ID	Customer - 400W	400W Fixture	1 fixture	New	1,085.88	12	\$222.43	100%	100%	\$23.42	18.46	18.46	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - ID	Customer - 1000W	1000W Fixture	1 fixture	New	0.00	12	\$804.99	100%	100%	\$0.00	0.00	0.00	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - ID	Other	Other	1 fixture	New	357.11	12	\$30.72	100%	100%	\$9.84	10.93	10.93	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - ID	Company - 100W	Smart Dimming Controller	street lights	Existing	119.80	15	\$150.00	0%	40%	\$5.42	13.34	13.34	AEG-Research
Street Lighting - ID	Company - 150W	Smart Dimming Controller	street lights	Existing	201.06	15	\$150.00	0%	40%	\$5.42	0.79	0.79	AEG-Research
Street Lighting - ID	Company - 250W	Smart Dimming Controller	street lights	Existing	302.11	15	\$150.00	0%	40%	\$5.42	2.77	2.77	AEG-Research
Street Lighting - ID	Company - 400W	Smart Dimming Controller	street lights	Existing	475.04	15	\$150.00	0%	40%	\$5.42	1.56	1.56	AEG-Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - ID	Customer - 100W	Smart Dimming Controller	street lights	Existing	119.80	15	\$150.00	0%	40%	\$5.42	109.12	109.12	AEG-Research
Street Lighting - ID	Customer - 150W	Smart Dimming Controller	street lights	Existing	200.43	15	\$150.00	0%	40%	\$5.42	15.63	15.63	AEG-Research
Street Lighting - ID	Customer - 250W	Smart Dimming Controller	street lights	Existing	302.11	15	\$150.00	0%	40%	\$5.42	38.10	38.10	AEG-Research
Street Lighting - ID	Customer - 400W	Smart Dimming Controller	street lights	Existing	453.80	15	\$150.00	0%	40%	\$5.42	29.99	29.99	AEG-Research
Street Lighting - ID	Customer - 1000W	Smart Dimming Controller	street lights	Existing	0.00	15	\$150.00	0%	40%	\$5.42	0.00	0.00	AEG-Research
Street Lighting - ID	Other	Smart Dimming Controller	street lights	Existing	200.44	15	\$150.00	0%	40%	\$5.42	23.85	23.85	AEG-Research
Street Lighting - ID	Company - 100W	Smart Dimming Controller	street lights	New	119.80	15	\$150.00	0%	40%	\$5.42	0.77	0.77	AEG-Research
Street Lighting - ID	Company - 150W	Smart Dimming Controller	street lights	New	201.06	15	\$150.00	0%	40%	\$5.42	0.05	0.05	AEG-Research
Street Lighting - ID	Company - 250W	Smart Dimming Controller	street lights	New	302.11	15	\$150.00	0%	40%	\$5.42	0.16	0.16	AEG-Research
Street Lighting - ID	Company - 400W	Smart Dimming Controller	street lights	New	475.04	15	\$150.00	0%	40%	\$5.42	0.09	0.09	AEG-Research
Street Lighting - ID	Customer - 100W	Smart Dimming Controller	street lights	New	119.80	15	\$150.00	0%	40%	\$5.42	6.30	6.30	AEG-Research
Street Lighting - ID	Customer - 150W	Smart Dimming Controller	street lights	New	200.43	15	\$150.00	0%	40%	\$5.42	0.90	0.90	AEG-Research
Street Lighting - ID	Customer - 250W	Smart Dimming Controller	street lights	New	302.11	15	\$150.00	0%	40%	\$5.42	2.20	2.20	AEG-Research
Street Lighting - ID	Customer - 400W	Smart Dimming Controller	street lights	New	453.80	15	\$150.00	0%	40%	\$5.42	1.73	1.73	AEG-Research
Street Lighting - ID	Customer - 1000W	Smart Dimming Controller	street lights	New	0.00	15	\$150.00	0%	40%	\$5.42	0.00	0.00	AEG-Research
Street Lighting - ID	Other	Smart Dimming Controller	street lights	New	200.44	15	\$150.00	0%	40%	\$5.42	1.38	1.38	AEG-Research

Utah Street Lighting Measures Assumptions

Table I-23 Summary of Street Lighting Measure Assumptions in Utah

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - UT	Company - 100W	100W Fixture	1 fixture	Existing	249.90	12	\$19.07	100%	100%	\$7.30	3,469.11	3,469.11	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - UT	Company - 150W	150W Fixture	1 fixture	Existing	324.74	12	\$30.72	100%	100%	\$9.05	505.31	505.31	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - UT	Company - 250W	250W Fixture	1 fixture	Existing	644.34	12	\$42.37	100%	100%	\$6.29	911.87	911.87	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - UT	Company - 400W	400W Fixture	1 fixture	Existing	1,121.79	12	\$222.43	100%	100%	\$18.97	617.10	617.10	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - UT	Customer - 100W	100W Fixture	1 fixture	Existing	315.16	12	\$19.07	100%	100%	\$5.79	3,660.12	3,660.12	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - UT	Customer - 150W	150W Fixture	1 fixture	Existing	485.65	12	\$30.72	100%	100%	\$6.05	2,244.03	2,244.03	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - UT	Customer - 250W	250W Fixture	1 fixture	Existing	768.77	12	\$42.37	100%	100%	\$5.27	2,122.78	2,122.78	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - UT	Customer - 400W	400W Fixture	1 fixture	Existing	1,176.61	12	\$222.43	100%	100%	\$18.09	4,948.67	4,948.67	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - UT	Customer - 1000W	1000W Fixture	1 fixture	Existing	308.16	12	\$804.99	100%	100%	\$249.96	113.97	113.97	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - UT	Other	Other	1 fixture	Existing	347.02	12	\$30.72	100%	100%	\$8.47	2,305.82	2,305.82	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - UT	Company - 100W	100W Fixture	1 fixture	New	249.90	12	\$19.07	100%	100%	\$7.30	441.84	441.84	STREETLGT_LED-Exterior Lighting-7PLN-v9-8

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - UT	Company - 150W	150W Fixture	1 fixture	New	324.74	12	\$30.72	100%	100%	\$9.05	64.36	64.36	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - UT	Company - 250W	250W Fixture	1 fixture	New	644.34	12	\$42.37	100%	100%	\$6.29	116.14	116.14	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - UT	Company - 400W	400W Fixture	1 fixture	New	1,121.79	12	\$222.43	100%	100%	\$18.97	78.60	78.60	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - UT	Customer - 100W	100W Fixture	1 fixture	New	315.16	12	\$19.07	100%	100%	\$5.79	466.17	466.17	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - UT	Customer - 150W	150W Fixture	1 fixture	New	485.65	12	\$30.72	100%	100%	\$6.05	285.81	285.81	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - UT	Customer - 250W	250W Fixture	1 fixture	New	768.77	12	\$42.37	100%	100%	\$5.27	270.37	270.37	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - UT	Customer - 400W	400W Fixture	1 fixture	New	1,176.61	12	\$222.43	100%	100%	\$18.09	630.28	630.28	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - UT	Customer - 1000W	1000W Fixture	1 fixture	New	308.16	12	\$804.99	100%	100%	\$249.96	14.52	14.52	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - UT	Other	Other	1 fixture	New	347.02	12	\$30.72	100%	100%	\$8.47	293.68	293.68	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - UT	Company - 100W	Smart Dimming Controller	street lights	Existing	119.80	15	\$150.00	0%	40%	\$5.42	916.61	916.61	AEG-Research
Street Lighting - UT	Company - 150W	Smart Dimming Controller	street lights	Existing	181.47	15	\$150.00	0%	40%	\$5.42	156.71	156.71	AEG-Research
Street Lighting - UT	Company - 250W	Smart Dimming Controller	street lights	Existing	301.17	15	\$150.00	0%	40%	\$5.42	234.51	234.51	AEG-Research
Street Lighting - UT	Company - 400W	Smart Dimming Controller	street lights	Existing	468.15	15	\$150.00	0%	40%	\$5.42	141.84	141.84	AEG-Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - UT	Customer - 100W	Smart Dimming Controller	street lights	Existing	123.24	15	\$150.00	0%	40%	\$5.42	1,222.03	1,222.03	AEG-Research
Street Lighting - UT	Customer - 150W	Smart Dimming Controller	street lights	Existing	196.24	15	\$150.00	0%	40%	\$5.42	1,342.39	1,342.39	AEG-Research
Street Lighting - UT	Customer - 250W	Smart Dimming Controller	street lights	Existing	253.69	15	\$150.00	0%	40%	\$5.42	857.25	857.25	AEG-Research
Street Lighting - UT	Customer - 400W	Smart Dimming Controller	street lights	Existing	455.76	15	\$150.00	0%	40%	\$5.42	1,199.98	1,199.98	AEG-Research
Street Lighting - UT	Customer - 1000W	Smart Dimming Controller	street lights	Existing	124.62	15	\$150.00	0%	40%	\$5.42	25.39	25.39	AEG-Research
Street Lighting - UT	Other	Smart Dimming Controller	street lights	Existing	194.78	15	\$150.00	0%	40%	\$5.42	711.16	711.16	AEG-Research
Street Lighting - UT	Company - 100W	Smart Dimming Controller	street lights	New	119.80	15	\$150.00	0%	40%	\$5.42	52.66	52.66	AEG-Research
Street Lighting - UT	Company - 150W	Smart Dimming Controller	street lights	New	181.47	15	\$150.00	0%	40%	\$5.42	9.00	9.00	AEG-Research
Street Lighting - UT	Company - 250W	Smart Dimming Controller	street lights	New	301.17	15	\$150.00	0%	40%	\$5.42	13.47	13.47	AEG-Research
Street Lighting - UT	Company - 400W	Smart Dimming Controller	street lights	New	468.15	15	\$150.00	0%	40%	\$5.42	8.15	8.15	AEG-Research
Street Lighting - UT	Customer - 100W	Smart Dimming Controller	street lights	New	123.24	15	\$150.00	0%	40%	\$5.42	70.20	70.20	AEG-Research
Street Lighting - UT	Customer - 150W	Smart Dimming Controller	street lights	New	196.24	15	\$150.00	0%	40%	\$5.42	77.12	77.12	AEG-Research
Street Lighting - UT	Customer - 250W	Smart Dimming Controller	street lights	New	253.69	15	\$150.00	0%	40%	\$5.42	49.25	49.25	AEG-Research
Street Lighting - UT	Customer - 400W	Smart Dimming Controller	street lights	New	455.76	15	\$150.00	0%	40%	\$5.42	68.94	68.94	AEG-Research
Street Lighting - UT	Customer - 1000W	Smart Dimming Controller	street lights	New	124.62	15	\$150.00	0%	40%	\$5.42	1.46	1.46	AEG-Research
Street Lighting - UT	Other	Smart Dimming Controller	street lights	New	194.78	15	\$150.00	0%	40%	\$5.42	40.85	40.85	AEG-Research

Washington Street Lighting Measures Assumptions

Table I-24 Summary of Street Lighting Measure Assumptions in Washington

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WA	Company - 100W	100W Fixture	1 fixture	Existing	254.27	12	\$19.07	100%	100%	(\$48.11)	532.09	532.09	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - WA	Company - 150W	150W Fixture	1 fixture	Existing	355.80	12	\$30.72	100%	100%	(\$30.66)	764.19	764.19	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WA	Company - 250W	250W Fixture	1 fixture	Existing	722.66	12	\$42.37	100%	100%	(\$13.27)	181.17	181.17	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - WA	Company - 400W	400W Fixture	1 fixture	Existing	1,139.00	12	\$222.43	100%	100%	\$9.44	271.07	271.07	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - WA	Customer - 100W	100W Fixture	1 fixture	Existing	263.04	12	\$19.07	100%	100%	(\$46.51)	200.78	200.78	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - WA	Customer - 150W	150W Fixture	1 fixture	Existing	216.17	12	\$30.72	100%	100%	(\$50.47)	299.16	299.16	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WA	Customer - 250W	250W Fixture	1 fixture	Existing	653.68	12	\$42.37	100%	100%	(\$14.67)	181.14	181.14	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - WA	Customer - 400W	400W Fixture	1 fixture	Existing	880.31	12	\$222.43	100%	100%	\$12.22	236.84	236.84	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - WA	Customer - 1000W	1000W Fixture	1 fixture	Existing	1,267.90	12	\$804.99	100%	100%	\$71.71	22.46	22.46	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - WA	Other	Other	1 fixture	Existing	300.15	12	\$30.72	100%	100%	(\$36.35)	677.51	677.51	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WA	Company - 100W	100W Fixture	1 fixture	New	254.27	12	\$19.07	100%	100%	(\$48.11)	67.32	67.32	STREETLGT_LED-Exterior Lighting-7PLN-v9-8

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WA	Company - 150W	150W Fixture	1 fixture	New	355.80	12	\$30.72	100%	100%	(\$30.66)	96.68	96.68	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WA	Company - 250W	250W Fixture	1 fixture	New	722.66	12	\$42.37	100%	100%	(\$13.27)	22.92	22.92	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - WA	Company - 400W	400W Fixture	1 fixture	New	1,139.00	12	\$222.43	100%	100%	\$9.44	34.30	34.30	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - WA	Customer - 100W	100W Fixture	1 fixture	New	263.04	12	\$19.07	100%	100%	(\$46.51)	25.40	25.40	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - WA	Customer - 150W	150W Fixture	1 fixture	New	216.17	12	\$30.72	100%	100%	(\$50.47)	37.85	37.85	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WA	Customer - 250W	250W Fixture	1 fixture	New	653.68	12	\$42.37	100%	100%	(\$14.67)	22.92	22.92	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - WA	Customer - 400W	400W Fixture	1 fixture	New	880.31	12	\$222.43	100%	100%	\$12.22	29.96	29.96	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - WA	Customer - 1000W	1000W Fixture	1 fixture	New	1,267.90	12	\$804.99	100%	100%	\$71.71	2.84	2.84	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - WA	Other	Other	1 fixture	New	300.15	12	\$30.72	100%	100%	(\$36.35)	85.72	85.72	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WA	Company - 100W	Smart Dimming Controller	street lights	Existing	119.80	15	\$150.00	0%	40%	\$6.89	132.96	132.96	AEG-Research
Street Lighting - WA	Company - 150W	Smart Dimming Controller	street lights	Existing	199.17	15	\$150.00	0%	40%	\$6.89	220.04	220.04	AEG-Research
Street Lighting - WA	Company - 250W	Smart Dimming Controller	street lights	Existing	300.79	15	\$150.00	0%	40%	\$6.89	48.56	48.56	AEG-Research
Street Lighting - WA	Company - 400W	Smart Dimming Controller	street lights	Existing	441.44	15	\$150.00	0%	40%	\$6.89	61.13	61.13	AEG-Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WA	Customer - 100W	Smart Dimming Controller	street lights	Existing	121.39	15	\$150.00	0%	40%	\$6.89	51.20	51.20	AEG-Research
Street Lighting - WA	Customer - 150W	Smart Dimming Controller	street lights	Existing	120.44	15	\$150.00	0%	40%	\$6.89	86.65	86.65	AEG-Research
Street Lighting - WA	Customer - 250W	Smart Dimming Controller	street lights	Existing	301.05	15	\$150.00	0%	40%	\$6.89	43.92	43.92	AEG-Research
Street Lighting - WA	Customer - 400W	Smart Dimming Controller	street lights	Existing	367.89	15	\$150.00	0%	40%	\$6.89	50.60	50.60	AEG-Research
Street Lighting - WA	Customer - 1000W	Smart Dimming Controller	street lights	Existing	475.04	15	\$150.00	0%	40%	\$6.89	4.90	4.90	AEG-Research
Street Lighting - WA	Other	Smart Dimming Controller	street lights	Existing	168.47	15	\$150.00	0%	40%	\$6.89	194.42	194.42	AEG-Research
Street Lighting - WA	Company - 100W	Smart Dimming Controller	street lights	New	119.80	15	\$150.00	0%	40%	\$6.89	7.66	7.66	AEG-Research
Street Lighting - WA	Company - 150W	Smart Dimming Controller	street lights	New	199.17	15	\$150.00	0%	40%	\$6.89	12.68	12.68	AEG-Research
Street Lighting - WA	Company - 250W	Smart Dimming Controller	street lights	New	300.79	15	\$150.00	0%	40%	\$6.89	2.80	2.80	AEG-Research
Street Lighting - WA	Company - 400W	Smart Dimming Controller	street lights	New	441.44	15	\$150.00	0%	40%	\$6.89	3.52	3.52	AEG-Research
Street Lighting - WA	Customer - 100W	Smart Dimming Controller	street lights	New	121.39	15	\$150.00	0%	40%	\$6.89	2.95	2.95	AEG-Research
Street Lighting - WA	Customer - 150W	Smart Dimming Controller	street lights	New	120.44	15	\$150.00	0%	40%	\$6.89	4.99	4.99	AEG-Research
Street Lighting - WA	Customer - 250W	Smart Dimming Controller	street lights	New	301.05	15	\$150.00	0%	40%	\$6.89	2.53	2.53	AEG-Research
Street Lighting - WA	Customer - 400W	Smart Dimming Controller	street lights	New	367.89	15	\$150.00	0%	40%	\$6.89	2.92	2.92	AEG-Research
Street Lighting - WA	Customer - 1000W	Smart Dimming Controller	street lights	New	475.04	15	\$150.00	0%	40%	\$6.89	0.28	0.28	AEG-Research
Street Lighting - WA	Other	Smart Dimming Controller	street lights	New	168.47	15	\$150.00	0%	40%	\$6.89	11.21	11.21	AEG-Research

Wyoming Street Lighting Measures Assumptions

Table I-25 Summary of Street Lighting Measure Assumptions in Wyoming

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WY	Company - 100W	100W Fixture	1 fixture	Existing	249.54	12	\$19.07	100%	100%	(\$49.58)	1,418.07	1,418.07	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - WY	Company - 150W	150W Fixture	1 fixture	Existing	349.80	12	\$30.72	100%	100%	(\$31.80)	687.12	687.12	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WY	Company - 250W	250W Fixture	1 fixture	Existing	645.89	12	\$42.37	100%	100%	(\$15.28)	359.62	359.62	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - WY	Company - 400W	400W Fixture	1 fixture	Existing	1,103.45	12	\$222.43	100%	100%	\$8.48	383.35	383.35	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - WY	Customer - 100W	100W Fixture	1 fixture	Existing	249.50	12	\$19.07	100%	100%	(\$49.59)	5.71	5.71	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - WY	Customer - 150W	150W Fixture	1 fixture	Existing	215.40	12	\$30.72	100%	100%	(\$51.63)	357.08	357.08	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WY	Customer - 250W	250W Fixture	1 fixture	Existing	645.89	12	\$42.37	100%	100%	(\$15.28)	49.92	49.92	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - WY	Customer - 400W	400W Fixture	1 fixture	Existing	749.71	12	\$222.43	100%	100%	\$12.48	177.97	177.97	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - WY	Customer - 1000W	1000W Fixture	1 fixture	Existing	1,172.91	12	\$804.99	100%	100%	\$73.26	1.85	1.85	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - WY	Other	Other	1 fixture	Existing	265.94	12	\$30.72	100%	100%	(\$41.82)	778.03	778.03	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WY	Company - 100W	100W Fixture	1 fixture	New	249.54	12	\$19.07	100%	100%	(\$49.58)	178.44	178.44	STREETLGT_LED-Exterior Lighting-7PLN-v9-8

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WY	Company - 150W	150W Fixture	1 fixture	New	349.80	12	\$30.72	100%	100%	(\$31.80)	86.46	86.46	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WY	Company - 250W	250W Fixture	1 fixture	New	645.89	12	\$42.37	100%	100%	(\$15.28)	45.25	45.25	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - WY	Company - 400W	400W Fixture	1 fixture	New	1,103.45	12	\$222.43	100%	100%	\$8.48	48.24	48.24	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - WY	Customer - 100W	100W Fixture	1 fixture	New	249.50	12	\$19.07	100%	100%	(\$49.59)	0.72	0.72	STREETLGT_LED-Exterior Lighting-7PLN-v9-8
Street Lighting - WY	Customer - 150W	150W Fixture	1 fixture	New	215.40	12	\$30.72	100%	100%	(\$51.63)	44.93	44.93	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WY	Customer - 250W	250W Fixture	1 fixture	New	645.89	12	\$42.37	100%	100%	(\$15.28)	6.28	6.28	STREETLGT_LED-Exterior Lighting-7PLN-v9-10
Street Lighting - WY	Customer - 400W	400W Fixture	1 fixture	New	749.71	12	\$222.43	100%	100%	\$12.48	22.39	22.39	STREETLGT_LED-Exterior Lighting-7PLN-v9-11
Street Lighting - WY	Customer - 1000W	1000W Fixture	1 fixture	New	1,172.91	12	\$804.99	100%	100%	\$73.26	0.23	0.23	STREETLGT_LED-Exterior Lighting-7PLN-v9-12
Street Lighting - WY	Other	Other	1 fixture	New	265.94	12	\$30.72	100%	100%	(\$41.82)	97.90	97.90	STREETLGT_LED-Exterior Lighting-7PLN-v9-9
Street Lighting - WY	Company - 100W	Smart Dimming Controller	street lights	Existing	119.80	15	\$150.00	0%	40%	\$6.89	333.57	333.57	AEG-Research
Street Lighting - WY	Company - 150W	Smart Dimming Controller	street lights	Existing	196.34	15	\$150.00	0%	40%	\$6.89	188.92	188.92	AEG-Research
Street Lighting - WY	Company - 250W	Smart Dimming Controller	street lights	Existing	302.11	15	\$150.00	0%	40%	\$6.89	82.40	82.40	AEG-Research
Street Lighting - WY	Company - 400W	Smart Dimming Controller	street lights	Existing	461.14	15	\$150.00	0%	40%	\$6.89	78.48	78.48	AEG-Research

Segment	End Use	Measure Name	Unit Definition	Construct. Vintage	Average Savings per Unit (Annual kWh @meter)	Measure Life (Years)	Average Incremental Cost (\$/Unit)	Base Year Saturation	Applicability	Levelized Cost (\$/kWh 2019-2038)	Cumulative Achievable Tech. Potential in 2038 (MWh @gen)	20-Year Incremental Achievable Tech. Potential (MWh @gen)	Savings Source
Street Lighting - WY	Customer - 100W	Smart Dimming Controller	street lights	Existing	119.80	15	\$150.00	0%	40%	\$6.89	1.34	1.34	AEG-Research
Street Lighting - WY	Customer - 150W	Smart Dimming Controller	street lights	Existing	120.90	15	\$150.00	0%	40%	\$6.89	98.18	98.18	AEG-Research
Street Lighting - WY	Customer - 250W	Smart Dimming Controller	street lights	Existing	302.11	15	\$150.00	0%	40%	\$6.89	11.44	11.44	AEG-Research
Street Lighting - WY	Customer - 400W	Smart Dimming Controller	street lights	Existing	313.31	15	\$150.00	0%	40%	\$6.89	36.43	36.43	AEG-Research
Street Lighting - WY	Customer - 1000W	Smart Dimming Controller	street lights	Existing	475.04	15	\$150.00	0%	40%	\$6.89	0.37	0.37	AEG-Research
Street Lighting - WY	Other	Smart Dimming Controller	street lights	Existing	149.27	15	\$150.00	0%	40%	\$6.89	213.91	213.91	AEG-Research
Street Lighting - WY	Company - 100W	Smart Dimming Controller	street lights	New	119.80	15	\$150.00	0%	40%	\$6.89	19.23	19.23	AEG-Research
Street Lighting - WY	Company - 150W	Smart Dimming Controller	street lights	New	196.34	15	\$150.00	0%	40%	\$6.89	10.89	10.89	AEG-Research
Street Lighting - WY	Company - 250W	Smart Dimming Controller	street lights	New	302.11	15	\$150.00	0%	40%	\$6.89	4.75	4.75	AEG-Research
Street Lighting - WY	Company - 400W	Smart Dimming Controller	street lights	New	461.14	15	\$150.00	0%	40%	\$6.89	4.52	4.52	AEG-Research
Street Lighting - WY	Customer - 100W	Smart Dimming Controller	street lights	New	119.80	15	\$150.00	0%	40%	\$6.89	0.08	0.08	AEG-Research
Street Lighting - WY	Customer - 150W	Smart Dimming Controller	street lights	New	120.90	15	\$150.00	0%	40%	\$6.89	5.66	5.66	AEG-Research
Street Lighting - WY	Customer - 250W	Smart Dimming Controller	street lights	New	302.11	15	\$150.00	0%	40%	\$6.89	0.66	0.66	AEG-Research
Street Lighting - WY	Customer - 400W	Smart Dimming Controller	street lights	New	313.31	15	\$150.00	0%	40%	\$6.89	2.10	2.10	AEG-Research
Street Lighting - WY	Customer - 1000W	Smart Dimming Controller	street lights	New	475.04	15	\$150.00	0%	40%	\$6.89	0.02	0.02	AEG-Research
Street Lighting - WY	Other	Smart Dimming Controller	street lights	New	149.27	15	\$150.00	0%	40%	\$6.89	12.33	12.33	AEG-Research

